DOCUMENT RESUME

ED 231 452 JC 830 297

AUTHOR	Ladwig, Dennis J.
TITLE	Determining the Effectiveness and Evaluating the Implementation Process of a Quality/Performance Circles System Model to Assist in Institutional Decision Making and Problem Solving at Lakeshore Technical Institute.
PUB DATE	May 83
NOTE	147p.; Ed.D. Dissertation, Nova University.
PUB TYPE	Dissertations/Theses - Doctoral Dissertations (041) -- Reports - Evaluative/Feasibility (142) -- Tests/Evaluation Instruments (160)
EDRS PRICE	MF01/PC06 Plus Postage.
DESCRIPTORS	Administrator Attitudes; Administrators; *Attitude Change; College Administration; College Faculty; *Decision Making; Foreign Countries; Governance; *Management Development; Participant Satisfaction; *Participative Decision Making; Pretests Posttests; *Program Effectiveness; Program Evaluation; Questionnaires; Student Personnel Workers; Teacher Attitudes; Technical Institutes; Two Year Colleges
IDENTIFIERS	Japan; *Lakeshore Technical Institute WI; Management Styles; *Quality Circles

ABSTRACT

During the 1982-83 school year, a quality/performance circles system model was implemented at Lakeshore Technical Institute (LTI) to promote greater participation by staff in decision making and problem solving. All management staff at the college (N=45) were invited to participate in the process, and 39 volunteered. Non-management staff (N=240) were allotted a limited number of openings, which were filled by 10 faculty members and 9 support staff. A study of the effectiveness of the model and of implementation procedures was conducted to investigate: (1) attitude changes before and after involvement; (2) differences in the attitude changes of management and non-management personnel; and (3) variations in the attitude changes of personnel with differing management styles. The study involved a presentation to all LTI personnel regarding the quality/performance system model, a literature review on the model and measures of its effectiveness, a pre- and post-test attitude survey, and the administration of a management style inventory. The results of the study revealed a significant change in participants' attitudes toward institutional decision making and problem solving. The study report includes an extensive literature review covering the development of quality circles in Japan and the United States; the results of the attitude surveys and of an evaluation of the quality/performance circles process; and the questionnaires. (LL)

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DETERMINING THE EFFECTIVENESS AND EVALUATING THE IMPLEMENTATION PROCESS OF A QUALITY/PERFORMANCE CIRCLES SYSTEM MODEL TO ASSIST IN INSTITUTIONAL DECISION MAKING AND PROBLEM SOLVING AT LAKESHORE TECHNICAL INSTITUTE

DENNIS J. LADWIG

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A MAJOR APPLIED RESEARCH PROJECT
PRESENTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR
THE DEGREE OF DOCTOR OF EDUCATION

NOVA UNIVERSITY

May 1983

VOL. 2

JC 830 297

ACKNOWLEDGEMENTS

When a project of this magnitude is pursued, it touches the personal lives and professional skills of many people. All of their contributions were important to the completion of this study.

For his professional assistance while this study was being conducted, I wish to express my appreciation to Dr. Sebastian V. Martorana, my major advisor. To Dr. George M. Barton of the Nova Central Staff Committee and Dr. George P. Grimes, Chicago Harper III Local Committee member, who were most helpful in their assistance and response to questions, I give my thanks.

To the Lakeshore Technical Institute (LTI) Board of Education and colleagues, my appreciation for the opportunity and assistance to pursue this research study. To Marvin Schrader, LTI curriculum specialist, for his professional advice and guidance throughout the duration of this study. To Bev Baranczyk, Darlene Jaeger, and the LTI office services staff, whose secretarial skills and abilities provided a professional image to this study. To Larry Nelson and his staff, a special thanks for their assistance in providing related literature sources and consultation services for this study.

My deepest appreciation to my wife, Sharon, for her patience, understanding, and sacrifices incurred during my pursuit of an advanced degree. Finally, to my daughters, Kelly, Kristin, and Kimberly, who had to sacrifice my attention and the opportunity to do family activities together.

Abstract of a Major Applied Research Project Presented to Nova University in Partial Fulfillment of the Requirements for the Degree of Doctor of Education

DETERMINING THE EFFECTIVENESS AND EVALUATING THE IMPLEMENTATION PROCESS OF A QUALITY/PERFORMANCE CIRCLES SYSTEM MODEL TO ASSIST IN INSTITUTIONAL DECISION MAKING AND PROBLEM SOLVING AT LAKESHORE TECHNICAL INSTITUTE

BY

DENNIS J. LADWIG

May, 1983

At the start of this study, Lakeshore Technical Institute (LTI) faculty, management, and support services staff personnel lacked the opportunity and had not yet developed skills necessary for effective participation in group decision making and problem solving. They were interested in the development and implementation of participative management techniques. To promote greater participative opportunities for its personnel, the LTI Board of Education implemented a Quality/Performance Circles system model during the 1982-83 school year. The purpose of this study was twofold: (1) to determine the effectiveness of a Quality/Performance Circles system model in decision making and problem solving and (2) to evaluate process implementation including training, acceptance, support, and impact.

The study involved 48 full-time LTI staff who volunteered to participate in the process. Included were 35 management and 13 nonmanagement staff.

Two components of evaluation were utilized in this study. The first component evaluated the effectiveness of the Quality/Performance

Circles process. This involved a pretest--treatment--posttest design which determined participant attitudes about the value of the technique and used the same attitude questionnaire as a pretest and posttest. The 32 items within the questionnaire were grouped into four factors: (1) acceptance of staff, (2) adequacy of communication, (3) adequacy, and (4) capability and training of staff in LTI decision-making and problem-solving processes. A management-style inventory was also administered with the pretest to determine whether a participant's management style was Theory X or Y, according to McGregor's definition (Jacoby and Terberg:1975:2). A posttreatment questionnaire was utilized to evaluate the training, acceptance, support, and impact of the Quality/Performance Circles implementation process.

Three hypotheses were formulated and tested. Hypothesis one was tested using a dependent t-test to compare the pre- and posttest scores of the total group on each of the four factors of the attitude questionnaire. Hypotheses two and three were tested using a discriminate analysis on the pre- and posttest scores of each of the four factors to determine whether there was any significant difference between management and nonmanagement groups and whether there was any significant difference between the participants with Theory X or Y management styles. The decision to reject or fail to reject the null hypothesis was based on significance at the .05 level using a two-tailed test.

The results of the study indicated a highly significant difference in the change in participants' attitudes following involvement with Quality/Performance Circles. Management staff's attitudes increased significantly more than the nonmanagement staff's. There was no significant difference between the change in attitudes of Theory X participants and Theory Y participants.

Findings of the study resulted in the following conclusions: After involvement with Quality/Performance Circles, (1) participants' attitudes were more positive toward institutional decision making and problem solving; (2) management staff's attitudes toward institutional decision making and problem solving were more positive than nonmanagement staff's; (3) Theory X and Y management style participants had similar increased attitudes toward institutional decision making and problem solving; and (4) Quality/Performance Circles participants believed that improvements in employee attitudes, instructional and support services, and quality of working life were a result of the process.

Study recommendations indicate that Lakeshore Technical Institute staff should (1) conduct research of the Quality/Performance Circles process in areas of longitudinal involvement and cost reduction, (2) incorporate participative management techniques in the institutional long-range plan to create greater opportunities for decision making and problem solving, (3) develop in-service training programs for nonparticipating faculty to encourage incorporation of circle techniques into existing curriculum of educational programs, and (4) develop other organizational innovations to improve employee productivity and quality of working life.

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Chapter I

INTRODUCTION

This Major Applied Research Project (MARP) addresses the development of a participative management technique called Quality Circles. This process is of importance to institutions of higher education, elementary and secondary institutions, and more specifically to the Lakeshore Technical Institute. Chapter I has been subdivided into seven sections. These sections are: (1) Background and Significance, (2) Statement of the Problem, (3) Purpose of the Study, (4) Research Questions and Hypotheses, (5) Definition of Terms, (6) Assumptions of the Study, and (7) Limitations and Delimitations of the Study.

Background and Significance

General background and significance. Recently, it has become fashionable to compare supposedly effective Japanese management with supposedly ineffective American management. One of the most commonly cited reasons for the apparent Japanese superiority is the extensive application of participative management techniques, one of which is the Quality Circles technique utilized in many Japanese organizations.

Marshall Sashkin stated in his research on participative management that:

> Many reasons account for Japanese success. However, there is little doubt that successful participative management practices have significantly benefited Japanese organizations. American organizations, like Japanese organizations, can profit from participative management in terms of workers' performance and productivity (Sashkin:1982:10).

American business, educational, governmental, industrial, and service entities are under increasing pressure to increase productivity of its workers. United States' productivity is at the lowest increase since World War II. This slowdown can be attributed to many factors, including costs for environmental cleanup, applying governmental regulations, the high cost of energy, and the high cost for capital improvements.

Kregoski and Scott, however, state that only a fraction of U.S. productivity slowdown can be attributed to those factors.

> If you examine the changing attitudes and values of the U.S. worker, you will get a glimpse of the major factor contributing to our decreasing productivity. The attitudes of the worker have changed--the jobs have not (Kregoski and Scott:1982:5).

In the last two decades, attempts have been made to make the work place more appealing to the employee. Humanization of work to make the work environment more pleasant; restructuring employee work duties to provide a more enriched, satisfying experience; and other similar changes have met with marginal success.

In recent years, U.S. management has begun an attempt to increase worker involvement and participation in the decision-making and problem-solving processes. It is believed that increases in employee motivation and commitment to organizational goals can be achieved when you meaningfully involve employees in the planning and decision making regarding problems that affect their work.

The Quality Circles process, successfully employed in Japanese industry within recent years, can be described as a process involving small groups of employees working together and meeting regularly to discuss such critical matters as: (1) more effective ways of carrying out their job assignments, (2) ways to improve their professional performance, and (3) factors enhancing the quality of their work life. A Quality Circle meets voluntarily on a regularly scheduled basis; receives training on problem-solving techniques, group decision-making processes, data gathering and presenting proposals; and implements corrective actions within the authority under their control. Ideally, members of a particular Quality Circle should be from the same work area or do similar work so that the problems they select will be familiar to all of them (Measurable Performance Systems Inc.:1981:1). Implementing a successful Quality Circle requires the following elements:

1. Organizational recognition and utilization of its personnel (employees).

2. Organizational support of its personnel in both personal and professional achievement.

3. Organizational commitment over the long term to improve performance in all facets of the organization.

Related literature sources referenced in this study indicated that the term Quality Circle is synonymous with a number of terms used to denote employee participation in decision making, problem solving, and/or problem analysis. Ford Motor Company has introduced an Employee Involvement (EI) program. Hughes Aircraft Company has a program entitled Hughes Circles. Kohler Company has developed an Employee Problem Solving (EPS) program. Measurable Performance Systems, a Milwaukee, Wisconsin, based management consulting firm, has developed Performance Circles (PC), an American alternative to Quality Circles.

The PC system is designed for managers and is designed for the public and service sector organizations while Quality Circles have been utilized within business, industry, and manufacturing environments. Both the Quality Circles and Performance Circles processes involve a long-term commitment and fully utilize people within the respective organization.

A summary of related literature (to be developed more completely in Chapter II) indicates the following benefits of a Quality/Performance Circles system may be accrued to an organization:

1. Inspires more efficient teamwork and open communication.
2. Increases employee motivation.
3. Creates employee problem-solving capability.
4. Builds positive employee attitudes toward problem prevention.
5. Promotes personal leadership development.
6. Develops harmonious manager/worker relationships.
7. Develops greater safety awareness.
8. Promotes cost reduction.
9. Capitalizes on an organization's most valuable asset--its people.
10. Ensures an organization of both today's and yesterday's investment in their personnel.
11. Enables employees to recycle their education, experience, and knowledge.
12. Combines some old-fashioned business principles with modern state-of-the-art technology.
13. Integrates easily with other management models (MBO, etc.).
14. Develops a motivational atmosphere for quality performance (Measurable Performance Systems:1981:1).

Lakeshore Technical Institute background and significance. Lakeshore Technical Institute (LTI), one of Wisconsin's 16 vocational, technical, and adult education districts (VTAE) (see Appendix A), is a vocational-technical institute offering a flexible and varied educational program and related services to the citizens and taxpayers of the two-county school district and the state of Wisconsin. LTI grants associate degrees, vocational diplomas, and certificates and also offers a variety of individual adult and continuing education courses. During 1982-83 LTI enrolled over 2,450 full-time equivalent students (unduplicated headcount of 27,100) and employed 277 full-time equivalent employees (unduplicated headcount of 929).

During the 1970s, the predominant governance model utilized by the Lakeshore Technical Institute (LTI) was the "bureaucratic model (Morphet, Johns, and Reller:1967:52-53)." The administration of LTI's policies and procedures were carried out according to the lines of authority and responsibility of the organizational chart. Decisions were made by formal procedures with the assistance and recommendation of various committees. The general purpose of the committee structure within LTI was to solicit input from various people with responsibility for decision making and problem solving remaining with the individual administrator in accordance with the role and responsibilities within the institution's organizational chart. Authority was delegated from the board of education to the district director (president) and then to the three major divisions of Administrative Services, Instructional Services, and Student Services.

Throughout the 1970s as enrollments increased and educational programs and services continued to expand, communications within LTI became more difficult. A Communications Task Force was formed during the 1977-78 school year to carry out a plan of action to meet a concern identified in the Lakeshore Technical Institute Self-Study submitted in 1976 to the North Central Association of Colleges and Secondary Schools in connection with the application for full accreditation. The plan of action for communication channels was identified to analyze current communication channels (lateral and vertical) available to provide interaction of management, staff, and students within the institution (Lakeshore Technical Institute Self-Study:1981:29).

Upon notification of its scheduled accreditation visit by the North Central Association of Colleges and Secondary Schools in the spring of 1982, LTI began the process of data gathering and self-evaluation in preparation for the visit. At the conclusion of the comprehensive reevaluation of the institution (March 19, 1982), the evaluation recommended that the accreditation of LTI be continued at the associate degree-granting level and that the next comprehensive evaluation be scheduled in ten years, 1991-92.

The final report issued by the Commission on Institutions of Higher Education of the North Central Association of Colleges and Secondary Schools was very complimentary and positive. However, contained within the final report were concerns to be addressed before the next scheduled visit in 1991-92. These concerns were program, financial, and service oriented. Within the list of concerns was a consensus of opinion that although the institution had rectified the majority of concerns from the 1976 accreditation study, efforts should be continued to improve communications. LTI employees interviewed during the accreditation evaluation expressed two large concerns: (1) a desire to have greater participation in the institution's decision-making and problem-solving processes and (2) an interest in developing a participative management style within LTI.

Employee attitudes and feelings toward communication, decision making, and problem solving as expressed during the North Central accreditation evaluation at the Lakeshore Technical Institute (LTI) needed to be addressed. Management and nonmanagement personnel generally had the feeling that the board of trustees/education and/or top administrative management will continue to issue directives based upon accountability expectations, economic pressures, and political pressures received from outside agencies or interest groups. The result is that, despite involvement on various committees (advisory, departmental, division, and management), the majority of LTI personnel had a feeling of not being able to participate in decision making and problem solving within the organization. They felt that many of the committees presently in operation within the Lakeshore Technical Institute address the "how to" of implementing decisions and policies and procedures directed downward from the board and top administration. These feelings were concerns to the LTI Board of Education and administration.

As already noted and to be shown further in Chapter II, research indicates that, with proper implementation and under appropriate conditions, a participative management style or model allowing greater employee involvement in decision making and problem solving can benefit an organization's performance level and increase productivity. Participative management research findings indicate that a major reason a participative management style or model is not effective within the governance structure of an organization may be the state of confusion regarding the definition of participative management. Researchers, scholars, and popular writers have also contributed to this state of confusion. Marshall Sashkin stated:

> To one well-known practitioner, Joseph Scanlon, participative management meant workers participating in the economic benefits generated by their cost and labor-saving innovations. To a widely recognized organizational researcher and practitioner, Rensis Likert, participative management was a comprehensive system of organization and management based on the use of group methods in every feasible operation and on thinking of the organization as a series of overlapping groups. For Aaron Lowen, participative management meant a system in which subordinates are involved in making decisions with guidance from their supervisors (Sashkin:1982:15-16).

A variety of participation opportunities for organizational members can be created within an organization. Examples include (1) participation in pay-plan development, (2) participation in performance appraisal system development, (3) participation in job redesign, and (4) participation in Quality Circles problem-solving groups.

LTI was interested in promoting Quality Circles within its educational seminars/workshops for local business, industry, and government during the 1982-83 school year. In an effort to have LTI management personnel obtain experience with the process, a decision was made to experiment with the Quality Circles process at a monthly meeting of the Council of Administrators, Coordinators, Supervisors, Specialists, and Support Staff Managers meeting (SAC) (see Appendix B).

Measurable Performance Systems, a Milwaukee-based consulting firm, conducted a half-day Quality/Performance Circles training session to the LTI SAC management group in April 1982. Upon reviewing the similarities and differences of the Quality Circles/Performance Circles process and reviewing the evaluation of the training sessions and the general response from the SAC managers, a decision was reached to implement a Quality/Performance Circles process model within LTI management and nonmanagement personnel during the 1982-83 school year.

LTI chose to call its participative management technique Quality/Performance Circles because of involvement of both management and nonmanagement personnel. Recognizing that the Quality/Performance Circles process is just one aspect of a participative management technique, it was the recommendation of the LTI administrative staff that movement toward an employee participative process (Quality/Performance

Circles) would be a long-range effort moving in the direction of including more participative management. In addition, it was the opinion of both the LTI Board of Education and administrative staff that the implementation of the Quality/Performance Circles process should be one of several efforts in addressing concerns contained in the final report of the 1982 evaluation of LTI by the North Central Association of Colleges and Secondary Schools.

Statement of the Problem

At the start of this study, Lakeshore Technical Institute personnel lacked the opportunity to participate in group decision making and problem solving and had not yet developed skills necessary for effective participation in group decision making and problem solving. The extent of the deficiencies in these areas was not known.

Purpose of the Study

Faculty, management, and support services staff personnel at the Lakeshore Technical Institute had expressed interest in becoming involved in problem solving in two ways. One was the development and implementation of more effective methods to accomplish their job responsibilities. Another was in the participation within the decision-making process at Lakeshore Technical Institute.

Therefore, this study had two main purposes: (1) to determine the effectiveness of a Quality/Performance Circles System model in decision making and problem solving at Lakeshore Technical Institute and (2) to evaluate process implementation including training, acceptance, support, and impact.

Research Questions and Hypotheses

The following research questions were addressed in this study:

1. Is there a change in attitudes of Lakeshore Technical Institute personnel before and after involvement with Quality/Performance Circles; and, if so, is it of a significant level?

2. Is there a change in attitudes between management and nonmanagement classifications before and after involvement with Quality/-Performance Circles; and, if so, is it of a significant level?

3. Is there a change in attitudes toward the use of Quality/-Performance Circles techniques in decision making and problem solving between LTI personnel having different management styles; and if so, is it of a significant level?

4. Was the implementation of the Quality/Performance Circles (QC/PC) process model adequate for LTI personnel to participate in the QC/PC process?

The foregoing questions can be rephrased into the following hypotheses:

1. There is a significant difference between the participating LTI staff pre- and posttest scores of the four factors made up from responses to the attitude questionnaire following involvement with Quality/Performance Circles.

2. There is a significant difference in the posttest scores related to the four factors making up the attitude questionnaire between the LTI management group and nonmanagement group following involvement with Quality/Performance Circles.

3. There is a significant difference in the posttest scores of participants with respect to the four factors making up the attitude

questionnaire between LTI personnel having different management styles following involvement with Quality/Performance Circles.

Definition of Terms

For the purposes of this study, a number of special concepts were dealt with; they are defined for use here as follows:

BUREAUCRATIC MODEL - Bureaucratic model of governance is a type of governance in which the decision making parallels the administrative structure of the institution, relationships are hierarchial, policies of the institution specify what decisions get made by whom within the structure, and the decision-making process will be determined by the level it is assigned within the organization (Morphet, Johns, and Reller:1967:52-53).

CIRCLE THEME - Circle theme is a general statement, usually quite idealistic, that stands for the purpose and direction of the circle. It is not measurable or specific, but it is the type of statement with which everyone would like to be associated (Measurable Performance Systems:1981:2).

CONSULTANT - Consultant is the Quality/Performance Circles management specialist hired by the LTI Board of Education to assist in the training and implementation of procedures.

FACILITATOR - An in-house person responsible for training, record keeping, coordination of group circle activities, interfacing circles with upper management and external consultants, and the overall direction of circle activities within the organization.

FACULTY - Faculty are personnel whose entire responsibility is classroom teaching.

LAKESHORE TECHNICAL INSTITUTE (LTI) - One of 16 Wisconsin VTAE districts located 60 miles north of Milwaukee and 70 miles south of Green Bay, Wisconsin, on the shores of Lake Michigan.

MANAGEMENT - A management staff member is either line or staff personnel responsible for specific duties and responsibilities involving the administration and management of the institution. Includes the classifications of administrators, coordinators, educational specialists, and supervisors.

NONMANAGEMENT - A nonmanagement staff member is defined as faculty and support services staff.

PARTICIPATIVE MANAGEMENT - Participative management is a management style that involves employees in the planning and control of their own work objectives (Sashkin:1982:16).

PERFORMANCE CIRCLES - Performance Circles System is designed for managers and focuses on broader-based performance concerns of the organization. In comparison, a Performance Circle might address the concern of absenteeism and a Quality Circle could address the cause of a mechanical breakdown in a piece of machinery (Measurable Performance Systems:1981:2).

QUALITY CIRCLES - Quality Circles are small groups of employees who do similar work; voluntarily meet regularly to identify and analyze causes of problems; recommend their solutions to management; and where possible, implement solutions. Quality Circles are designed for workers (nonmanagement). Quality Circles work on specific problems within their own area of expertise (Measurable Performance Systems:1981:2).

QUARTERLY THEME - Quarterly theme is not measurable; however, it establishes time parameters and focuses on a specific topic or concern.

SUPPORT SERVICES STAFF - Support services staff are personnel hired for carrying out the noninstitutional work functions such as technical, secretarial, clerical, and maintenance.

WISCONSIN VOCATIONAL, TECHNICAL AND ADULT EDUCATION (VTAE) - The vocational, technical, and adult education system of Wisconsin consisting of 16 VTAE districts offering college-transfer programs, two-year associate degree, one-year diploma, and comprehensive adult and continuing education programs.

Assumptions of the Study

The following assumptions were made concerning this study:

1. Responses obtained through the questionnaires were accurate and validly based upon the opinions of the Quality/Performance Circles participants.

2. Management and nonmanagement staff participating in the study were representative of the total Lakeshore Technical Institute management and nonmanagement staff.

3. Lakeshore Technical Institute management and nonmanagement staff participation in Quality/Performance Circles will have an impact on the decision-making and problem-solving processes within the institution.

Limitations and Delimitations of the Study

This study had a number of inherent limitations and was also designed to have served specific delimitations. They can be further described as:

1. For the purpose of this study, the implementation and evaluation of the Quality/Performance Circles System model was limited to the Lakeshore Technical Institute personnel.

2. The involvement of employees of the Lakeshore Technical Institute was limited to include faculty, management, and support services personnel participating in the Quality/Performance Circles System model. Exactly 58 full-time employment equivalency staff participated of a total full-time employment equivalency of 250 staff members.

3. Questionnaire responses were based upon the perception of the respondent and may not have been based on actual experience within other decision-making and problem-solving systems.

4. Questionnaire responses to the general evaluation of the Quality/Performance Circles System model implementation could have resulted in some open-endedness which required author interpretation.

5. Participation in the Steering Committee meeting and implementation training sessions of the Quality/Performance Circles System of decision making and problem solving may have effected a change in the management style of some LTI personnel.

6. Questionnaire responses of the Lakeshore Technical Institute management and nonmanagement staff may have been influenced by the LTI faculty contract negotiation issues/problems and economic conditions during the 1982-83 school year.

Chapter II

REVIEW OF RELATED LITERATURE

The review of related literature in Chapter II has been subdivided into five main categories, each related to a key concept or body of existing knowledge on which this Major Applied Research Project (MARP) significantly relies. The five categories are: (1) Employee Involvement/Participation in Decision-Making and Problem-Solving; (2) Development of Quality Circles--Japan; (3) Development of Quality Circles--United States Business and Industry; (4) Development of Quality Circles--United States Educational Institutions and Government; and (5) Implications and Interpretations of Quality Circles Process in the United States. The chapter closes with a summary.

Employee Involvement and Participation in Decision Making and Problem Solving

In the 1920s, psychologists began to study the physical effects of the work place and of work organizations on employee performance. From the mid-1920s through 1936, the Hawthorne studies, carried out at the Western Electric's Hawthorne plant on the outskirts of Chicago, were conducted on the social psychology of behavior in organizations and of participative management. Fritz Roethlisberger, who worked with the company's personnel department, summarized the primary factor of a participative management approach:

> People like to feel important and have their work recognized as important . . . They like to work in an atmosphere of approval. They like to be praised rather than blamed . . . They like to feel independent in their relations to their supervisors . . . They

> like to be consulted about and participate in actions that will personally affect them (Sashkin:1982:21).

During the 1940s, American managers accepted the Hawthorne findings that performance and productivity can be dramatically improved if managers pay more special attention to their subordinates. However, managers soon discovered that positive effects of special attention were rather short-lived.

Research on what workers really want from their jobs was reported by Lawrence Lindahl. In this study, supervisors were asked to rank a series of items that describe things workers want from their jobs in order of importance from a worker's perspective. In addition to the supervisors, the workers themselves were asked to rank these same items in terms of what they wanted most from their jobs. The results are shown in Table 2.1.

As is evident from the results of the 1948 study, supervisors' perceptions of what workers wanted from a job and the actual worker desires differed considerably. While supervisors felt workers most desired (1) good wages, (2) job security, (3) promotion, and (4) good working conditions, the workers ranked (1) full appreciation for work done, (2) feeling "in" on things, (3) sympathetic understanding of personal problems, and (4) job security, in that order.

Research studies on goal setting for supervisors and subordinates have yielded positive results. Results have shown that goal setting seems to help people gain greater control over their work activities by identifying the specific aims of those activities. The most common approach to goal setting, management by objectives (MBO) that was instituted in the 1970s, has been phased out in some organizations.

Table 2.1

What Do Workers Want From Their Jobs?

Items	Supervisors	Workers
Good working conditions	4	9
Feeling "in" on things	10	2
Tactful disciplining	7	10
Full appreciation for work done	8	1
Management loyalty to workers	6	8
Good wages	1	5
Promotion and growth with company	3	7
Sympathetic understanding of personal problems	9	3
Job security	2	4
Interesting work	5	6

(Hersey and Blanchard:1977:47)

When applied as organizational-wide programs, many MBO efforts strangled in their own bureaucratic red tape (Sashkin:1982:23-24).

In 1956 Morse and Reimer, researchers at the University of Michigan, conducted an experimental study on employee participation in decision making within one large department at the home office of an insurance company. The study involved both individual and group participation in decision making. In two of four major divisions of the insurance company, a program was instituted for increasing decision-making responsibility at lower levels. In the other two divisions, employees became less involved in decision making than ever before as all decisions were made at the department level and employees had no influence whatsoever over them. The results of the study revealed that workers in the experimental participative divisions increased in self-actualization as measured in terms of job challenge, opportunity for personal growth, and opportunity to try new ideas. Workers in the control departments experienced decreases in job satisfaction and productivity (Morse and Reimer:1956:120-129).

Much of the work on participative problem solving involvement of workers is attributable to Norman R. F. Maier. Maier defined two critical questions to be considered. The first question is, "Will acceptance or rejection of the solution make a difference in how well it is carried out?" When worker acceptance is not an issue, there is no real need to involve worker participation in solving the problem. When acceptance is an issue, it is important to involve worker participation so they can have influence or control over the solution that is chosen. This, then, results in the workers' commitment to, and acceptance of, the solution.

The second question is, "Is the quality of the solution a concern to management?" When quality is of little concern but worker acceptance is important, group problem-solving discussion is both appropriate and simple. If quality is important but acceptance is not, it is appropriate for a manager to solve the problem without any group involvement.

Maier concluded that employee participation in problem solving can have two main benefits: (1) adding substantial meaning to work itself and (2) allowing workers to participate in a complete cycle (beginning to final completion) of the problem-solving process (Sashkin:1982:27-29).

Participation opportunities for organizational members can involve one-time routine tasks or provide ongoing opportunity for participation in group problem-solving activities. Examples of these are: (1) pay-plan development, (2) participation in performance appraisal system development, (3) participation in job redesign, and (4) participation in Quality Circle problem-solving groups.

Edward Lawer and his associates have studied the impact of pay-plan development systems in organizations. After a decade of research and development on these approaches, they concluded that employee participation in devising pay plans is an effective approach to participation that results in acceptance of and commitment to the plans developed, satisfaction with these plans, and eventually increased performance and productivity (Lawer:1981:55-62).

L. L. Cummings conducted experimental research with respect to an organization's participation in performance appraisal systems. The study used eight work groups involving a total of 140 employees performing identical tasks. Cummings involved four of the groups participatively in the development of new departmental performance appraisal systems. The other four groups remained under the old performance appraisal system.

One year after the new systems were implemented, Cummings found that attitudes and perceptions of workers under both the old and the new systems had improved. These improvements, however, were significantly greater for workers in groups using the new systems (Cummings:1973:489-502).

Outcomes of research on employee participation in job redesign are divided on whether or not worker involvement is necessary.

Herzberg specifically recommends against worker involvement in job redesign. Richard Hackman and his colleagues state that there is a positive impact of work design that can be further increased when workers are actively involved. Changes in work design can be aimed at increasing the control and autonomy of workers through participation in setting their own goals, in making decisions, and in solving problems. Worker participation provides for meaningful tasks about which workers can develop feelings of accomplishment created through actual changes in task content rather than through participation in problem solving or change (Sashkin:1982:55-56).

Development of Quality Circles--Japan

One relatively new participative management approach called Quality Circles is a technique that the Japanese learned from American managers in 1950. A Quality Circle is a group of people who voluntarily meet together on a regular basis to identify, analyze, and solve problems such as quality, etc., in their area. Ideally, members of a particular circle should be from the same work area or do similar work so that problems or projects they select will be familiar to all of them (Dewar:1979:5). A great volume of research supports the Quality Circles process as an effective, participative, and group problem-solving process adaptable to business, industry, and educational and governmental organizations.

Conditions which fostered consideration of Quality Circles.

Following World War II, the Japanese were left with much of its heavy industry in ruin. The rebuilding of Japan began with the soft industries such as textiles and small piece work.

General Douglas MacArthur, in command of the United States occupation of Japan after World War II, was committed to a policy of putting the Japanese economy back on its feet as quickly as possible. He clearly recognized that Japan's economy, with its minimal quantities of national resources, required trade with other nations. The quality of goods built in Japanese industry after World War II were known to be of shabby quality, and it was clear that this reputation as a "junk merchant" would have to change in order to inhibit international trade (Kregoski and Scott:1982:14).

The effects of the war had left male workers in short supply, and large numbers of females began to be employed in the factories. This represented a significant social change for the Japanese woman who was now working in a new environment where she was expected to make decisions and take the initiative. This situation caused many of the factories to be organized into work groups that held meetings to help train the workers, discuss their problems, and to encourage them to work better.

In the process of rebuilding Japanese industries destroyed during the war, a large part of the efforts were concentrated on improving the quality of Japanese products. These efforts were directed toward expanding international trade.

> Quality products will always sell, because good quality best serves the consumer. The Japanese learned that as quality control forms an integral part of the manufacturing process to improve product quality by reducing production of defective goods, the cost of production will decrease without exception (Karatsu:1980:26-27).

Development of Quality Circles--Japan. The new technique of Quality Control, Statistical Quality Control, or SQC, was developed in the United States. This concept and these techniques reached Japan after World War II through the effort of General MacArthur and Japanese leaders in government and industry. Major events pertaining to quality/statistical control in the period immediately following the war are shown in Table 2.2.

Especially noteworthy was the visit from the United States of Dr. W. E. Deming, a statistician for the U.S. government, who lectured at an 8-day seminar on quality control held in July 1950. This seminar was designed to teach the basics of control charts and sampling inspection. It opened up a new era in quality control in Japan by attracting the attention of Japanese engineers to the statistical method of quality control.

In 1951 the Japanese Union of Scientists and Engineers (JUSE) honored Deming's services by establishing the Deming Prize. This recognition, the most prestigious honor that an individual or corporation can receive in the field of quality, became an annual award issued by JUSE, which is an organization similar to American organizations such as the American Society of Quality Control (ASQC) or the American Management Association (AMA) (Ingle:1982:8).

In 1953 the importance of company-wide quality control activities came to be stressed in Japan. Until then, the so-called statistical quality control (SQC) had been carried out in Japan with the sole aim of application of statistical methods. Under the SQC system, neither the firm's top management nor workshop operators had anything to do with quality control (Mizuno:1969:2-13).

Another important milestone was the visit of Dr. J. M. Juran in July 1954. His lectures on total quality control at a QC management

Table 2.2

Chronology of Quality Control in Japan Before 1961

January 1949	The Overseas Technical Research Committee was organized to form the Union of Japanese Scientists and Engineers (JUSE). The Quality Control subcommittee was organized within this committee. The subcommittee later developed into the QC Research Group and introduced quality control to Japan.
June 1949	Japanese Standards Association (JSA) organized a seminar on "Statistical Quality Control."
September 1949	JUSE organized a seminar titled "Quality Control Basic Course."
September 1950	Training of foremen at the workshop level started using TWI methods.
March 1950	JUSE published a magazine "Statistical Quality Control" (HINSHITSKU KANRI).
March 1950	Japanese Industrial Standards (JIS) was established under the Industrial Standard Law. Quality Control check at the corporate level started to implement JIS system.
July 1950	Dr. W. E. Deming was invited to teach in the "8-day Quality Control Seminar" organized by JUSE.
June 1951	The Deming Prize was instituted.
September 1951	The First Quality Control Conference was held.
September 1953	JSA organized a seminar titled "Standardization and Quality Control Seminar Basic Course."
July 1954	Dr. J. M. Juran was invited to teach in the "Quality Control Management Seminar" organized by JUSE.
July 1956	The Japan Short-wave Radio started broadcasting a quality control course organized by JUSE.
November 1960	The first "Quality Month" was implemented nationwide. Q-mark and Q-flat were formally adopted.

(QC Circle Headquarters, JUSE:1980:3)

seminar ushered in the third stage in the development of QC; i.e., the period of systematic application of Quality Control (1955-60) (QC Circle Headquarters, JUSE:1980:4).

While the technique and concept of Statistical Quality Control and Total Quality Control were developed in the United States and were imported, quality control activities at the workshop level were developed in Japanese corporations. The chronology of Quality Control activities is presented in Table 2.3.

The initiation of Quality Circles in Japan is generally attributed to the project begun in 1961 by the Editorial Committee of the magazine *Statistical Quality Control*. These editors sponsored a symposium on problems facing first-line supervisors and foremen to improve their quality control ability. From the symposium, two ideas emerged. First, there was a need for a quality control magazine designed for people in a workshop. The magazine, *Genba-To-QC* (later renamed as *FQC*, [QC For The Foreman]), was designed to be more down to earth or closer to the shop floor than existing publications. Second, there existed a lack of opportunity for foremen to air their opinion outside the factory. In November 1962, JUSE organized the first Quality Circles conference for foremen (Kregoski and Scott:1982:15-16). Subsequent Quality Circle conferences were held in Sendai, northern Japan, in May 1963 and Osaka, Kanazawa, and Nagoya in 1964.

Since 1962 when Quality Circles were first introduced in Japan, activities have expanded and diversified. They are:

1. *Subcircle* - Division of an original Quality Circle into smaller units in order to increase the sense of participation.
2. *Joint QC Circle* - Quality Circles of several workshops pool their knowledge to solve common problems.

Table 2.3

Chronology of Quality Control Activities
in Japan Before 1962

January 1956	A Forum on "Foremen's Experience on Quality Control" was held. "Statistical Quality Control" magazine carried an article on this forum.
January 1960	JUSE published a monogram titled "Foremen's Textbook on Quality Control A and B." This was the first time in the world for QC textbooks to be used at the workshop level. Up to 1979 about 500,000 copies have been sold.
March 1960	The 10th anniversary issue of the magazine "Statistical Quality Control" carried feature articles on: 1) QC and people at the workshop 2) QC and senior high school education 3) QC and consumers
July 1960	Japan Productivity Center organized a seminar "Foremen's QC" instructor course.
November 1961	The magazine "Statistical Quality Control" special edition for foremen was published.
November 1961	The 11th Quality Control Conference was held. One of the panel discussion chose a subject "the role of foremen in QA (Quality Assurance)." A series of events provoked awareness of the importance of quality control at the workshop level. Publication for foremen to develop themselves was called for.

(QC Circle Headquarters, JUSE:1980:5-6)

3. Broader Subjects - Subjects are no longer limited to quality but incorporate such areas as efficiency productivity, cost reduction, facility planning, and production control.

4. Simple Techniques for Problem Solving - Having mastered simple Quality Circle techniques, some circles now apply more sophisticated methods of industrial engineering such as motion study; time study; process analysis; or statistical methods such as regression analysis, design of experiment, or other advanced methods such as value analysis and PERT.

5. Workers' Participation - Recently, ordinary workers have become circle leaders as a result of a larger circle split into subcircles and minicircles.

6. Voluntary Management of Quality Circles - Circle leaders voluntarily organize a system where they plan the administration of an entire organization.

7. Quality Circles Combined With a Suggestion System - Suggestions made by Quality Circles are also channeled through this system as group suggestions in addition to individual suggestions. Prizes are awarded in many creative ways.

8. Senior High and Technical School Involvement - Teachers are invited to Quality Circle conferences, and case study presentations are held at a company in the locality. One of the objectives is to show teachers how well their students are doing after graduating and to ask teachers to introduce some basic subjects on Quality Circles in school curricula to facilitate Quality Circle activities (QC Circle Headquarters, JUSE:1980:11-17).

Quality Circle outcomes and limitations. The original Quality Circle concept was initiated with manufacturing companies, but a new trend is currently developing. Nonmanufacturing organizations are incorporating the concept into their companies as well. Financial organizations with vast numbers of clerical employees, are recognizing that the program holds the same potential for them as has been proven for the industrial sector of the economy.

Currently, Japanese products are enjoying the reputation for a high standard of excellence.

> Time magazine recently described the U.S. television industry as slowly dying while the Japanese companies were growing. Zenith layed off 5,000 people in 1975 because of the high cost of manufacturing in the United States. It is well-known that today the motorcycle business is also dominated by Japanese companies. Honda, Suzuki, Yamaha, and Kawasaki account for more than 80 percent of the world's production. During 1980, for the first time in history, Japan will have built more cars than the American companies. Cameras, watches, steel, and other industries are also slowly coming to be dominated by Japan. Today, Japan builds a variety of quality products at reasonable cost and can compete with any nation in the world (Ingle:1982:1-2).

Japanese business and governmental leaders feel that the emphasis of quality control and the performance of Quality Circles have been significant factors in improving productivity and quality of products. A country the size of Montana, Japan has virtually no physical resources, yet it supports over 115 million people (half the population of the United States) and exports $75 billion worth of goods more than it imports. Japan has come to dominate one industry after another because of its emphasis on quality, productivity, and managerial skill (Pascale:1982:112).

The nature of the boss--subordinate relationship in Japan facilitates a sharing of credit. Japanese bosses see themselves as teachers and coaches of their subordinates, not as task masters or judges of performance. This relationship vastly accelerates the rate at which subordinates become skilled managers.

The Quality Circles process in Japan is facing challenges, and concern has been expressed by the Japanese. Adjustments are incurring in regard to the changing characteristics of Japanese employment policies. The system of lifetime employment is being reworked. The lifetime employment system in Japan is not yet so altered that layoffs are a realistic option for employee-heavy companies; however, firms are increasingly rotating workers among jobs within their plants and loaning other workers to affiliated companies which are temporarily shorthanded.

McClenahen reported that the Japanese Quality Control Circles or approach does not appear to be working in all situations. There are real problems in trying to apply the process to professional and technical workers whose discipline doesn't come from the production line. The Japanese worker is becoming more aware that life exists outside the company (McClenahen:1980:33-34).

Development of Quality Circles--
United States Business and Industry

Conditions which fostered consideration of Quality Circles.

Today our nation faces serious economic problems because of the high cost of production and keen foreign competition. Every American organization, whether it be business, industrial, or service, has an important part to play in finding a solution to these problems. American industries' loss of competitiveness over the past two decades has been nothing but an economic disaster. In the 1960s the United States accounted for more than one-fourth of the manufacturing exports of industrial nations while supplying 98 percent of its domestic market. Since then, the United States has not only been losing market shares both at home and abroad but the decline actually has been accelerating (Ingle:1982:1).

American business leaders are becoming aware that United States industry is less and less able to deliver top-quality goods and services that are competitively priced and need foreign competition. Related literature indicated that American business leaders are becoming increasingly aware that Japan, not the United States, sets the standards of quality, reliability, and excellence for manufactured goods in many markets.

While American business and governmental leaders openly admit that we do have a productivity problem, they indicate there is nothing wrong with the work force. Any crisis of reduced output is the direct result of poor management that has characterized our organizations in recent decades. W. Edward Deming, the American statistician whose work in Japan in the late 1940s fathered the productivity boom there, has concluded that 85 percent of all productivity problems can be traced to management while only 15 percent reflect workers' performance (Hall: 1982:8).

Recent research on productivity in organizations ranging from fast-food restaurants to research and development laboratories clearly show that management policies, practices, and procedures are the keys to productivity. Workers in high-producing organizations as compared with those in low-producing organizations are by far more involved and committed to their work. In high-producing organizations, managers know how to release the inherent competence of people and bring it to bear on the work that needs to be done.

The amazing increases in productivity in Japan had generated a lot of interest by the U.S. in the employee involvement techniques attributed to these increases in productivity and improvement in quality control of products produced. These employee involvement techniques include Quality Circles, team-building approaches, and suggestion systems.

A review of the history of quality workmanship in the world reveals that during the 19th century and at the beginning of this century, the quality of material built in England and in Germany was considered number one. After World War II, the number one place was taken over by the United States. However, by the end of 1970 and clearly in 1980, the market was completely dominated by Japanese products (Ingle: 1982:2).

Kregoski and Scott reported that:

> The change in worker motivation has missed the eye of the U.S. Chief Executive Office (CEO). It has been a number of years since the CEO directly supervised first-line or entry-level employees and his/her memory is filled with attitudes and work ethics of decades

> past. Since s/he no longer interacts directly with this segment of the company, s/he lacks the first-hand experience of this change. In his/her own circumscribed world, this change may be confusing and lacks reality (Kregoski and Scott:1982:18).

Between 1920 and 1945, the leadership style of managers was primarily autocratic and well-suited to the demands of stable, structural work patterns. The leader was seen as the expert who was capable pattern of recurring work problems. At the same time, the educational level of most workers was low, and their social values were such that autocratic decisions were accepted without question and, indeed, expected.

During the period of 1945 to 1970, the growth of union power was the main force which caused leaders to adopt what could be called the consultive/negotiative style. The aim of consultation was to gain commitment to decisions made by management and resulted in the creation of the so-called Works Council. The aim of negotiations, on the other hand, was to reach compromise decisions and resulted in the employment of industrial relations experts and an increase in industrial relations procedures and government legislation.

Since 1970, another gradual change in leadership style has emerged due to two pressures. First, managers are having to deal with a better qualified and educated work force, who expect to be involved in the making of decisions which affect them. Secondly, there has been a technological revolution, especially in the development and use of computers. Thus, managers are having to cope with rapidly changing work patterns and problems which cannot always be solved by yesterday's knowledge and experience. Increasingly, managers are forced to consult with employees in order to make quality decisions or delegate in the making of decisions to subordinates. This form of participation towards delegating the making of decisions is apparent in the growing use of semiautonomous work groups and the Quality Circles approach to problem solving. Prescott calls this emerging leadership style tactical. The principles of tactical leadership are:

> 1. People are most committed to decisions when they make them themselves.
> 2. Two heads are better than one when tackling unstructured problems.
> 3. Goals motivate individuals and teams.
> 4. Differences in status and conditions of service are potential causes of people not working together effectively.
> 5. Communication controls are more effective with teams of 4 to 20.
> 6. Knowledge of results improved performance

(Prescott:1981:239-240).

Like most good things, tactical leadership principles are deceptively obvious; but to apply them fully requires a radical change in the attitudes of managers, workers, and unions. Such a change can only be brought about by the passage of time, survival needs, or preferably, a program of training designed to change attitudes at the highest levels of management to convince them of the need for change. Without commitment from the top, any initiative at lower levels is bound to be limited in scope and probably doomed to failure.

During the 1980s management style is going to change drastically in the United States and many other countries. The reason for this change is that management has the responsibility to run business organizations successfully and profitably, despite inflation, recession, and any other economic problems. Yet, the management styles most commonly practiced do not promote profitable operations during periods of economic distress. If American companies adapt the concept of participative management, it can improve productivity and assist in tapping the creativity of every individual in an organization.

Sud Ingle stated in the 1982 spring edition of the BNAC Communicator that Dr. Ishikawan, who is considered the father of Quality Circles in Japan, believes that:

> Quality Circles can grow in any country, or any culture, as long as one respects the brain power of human beings and uses it effectively to the betterment of society.
>
> One can expect an explosion of Quality Circles around the world during the 1980s. Participative management will be the buzz word of the decade (Ingle:1982:4).

Historical development of Quality Circles--United States. In one section of Ingle's book, he stated:

1. Peter Drucker, in his book Management, reported that group participation activities took place in Germany during 1890. Ernst Abbe' of ZEISS Company, a famous German optical company, did a lot of problem solving with the help of his workers.

2. In 1925, AT&T utilized statistical quality control techniques that were achieved through group participation.

3. The basic idea of worker participation was effectively used by Walt Disney in the 1940s. He was known to call the spouses and children of his employees weekly just to meet and discuss with them suggestions for improvement.

4. IBM used group problem solving techniques in the late forties in the development of its first electronic computer.

5. In the late 1950s, Sidney Rubenstein started a program called Participative Management System, which was the basic idea of a Quality Circle system. This system was implemented in many small companies. The Participative Management System directly taught techniques similar to those taught in Quality Circles (Ingle:1982:6-14).

A team of managers from Lockheed Aircraft visited Japan in 1973 to investigate the Quality Circles movement. Their visit took them to companies such as Bridgestone, Kobe Steel, Toyota, Honda, as well as to meeting with officials from the Japanese Union of Scientists and Engineers (JUSE). Lockheed's management team discovered that Quality Circles were working in Japan. While they found that the Japanese culture and the cooperation of government and unions had contributed to the success of the Quality Circles movement, they became convinced that the process could be applied in the American work place (Kregoski and Scott:1982:16-17).

Lockheed was the first U.S. manufacturing firm to successfully introduce the Quality Circles process and has led the way for the other organizations who have followed their lead. Despite some reservations that Quality Circles may be a temporary fad, they are the fastest growing productivity improvement strategy in the country. According to the Wall Street Journal, Quality Circles are in place and functioning in 65 major corporations. Quality Circles are growing at a 400 percent plus growth rate. As the success of Quality Circles impacts business and industry, American business leaders are finding that Quality Circles are not just limited in use to manufacturing environments. Although the Japanese have pretty much restricted circles to factory-floor operations, the United States applications range from publication departments to middle management groups and real estate offices (Zemke:1980:18).

As recently as 1978, few American managers had even heard of the Quality Circles process. Today, its use is becoming common as evidenced by the exposure received through trade and news publications and radio and television stations across the country. The Quality Circles process is now under way in Hughes Aircraft, 3M Company, General Motors Corporation, Ford Motor Company, Westinghouse, General Electric, Bank of America, Memorex Corporation, and Polaroid Corporation. A significant interest has been shown by hospitals, service organizations, and professional firms (Yager:1981:98-99).

Applications of the Quality Circles process in the United States

Because of Quality Circles success in Japan, thousands of Quality Circles involving millions of workers are in operation in the United States. Many organizations already began implementing them or are at least contemplating using Quality Circles. Lockheed, Westinghouse, Honeywell, and General Motors are examples of Quality Circles practitioners (Cross:1982:95-97).

More than 250 employee problem-solving teams involving 2,500 employees are currently tackling similar work-related problems at Ford Motor Company as part of a new program called Employee Involvement (EI) introduced by Ford working with United Auto Workers (UAW). This cooperative effort is a major step in a process of employee participation in decisions that affect their work and the overall work environment. It is broad in scope and encompasses improvements in product quality, operational efficiency, job satisfaction, and employee relations.

The Ford-UAW program reaches from small problem-solving groups in the smallest departmental units in Ford plants to top management/-union levels. It aims to give every interested employee the opportunity to participate in decisions that affect him and his job.

The Ford-UAW program of employee involvement is an example of management and union working together to increase productivity and provide a better product to the consumer. Donald F. Ephlin, UAW vice president and director of its National Ford Department, commented:

> We know how to strike . . . how to fight . . . how to bargain. We don't have to prove those things any more. What we do have to prove now is that we can solve problems. We believe the union has a positive role to play in the future of the company. We are convinced that Ford is going to make it. But it's going to make it better because of our involvement (Tavernier:1981:16).

The Quality Circles concept has been used in the U.S. aerospace industry. Lockheed Corporation brought Quality Circles into the industry in 1974. In 1976 Hughes Aircraft Company management personnel investigated Quality Circles and were so impressed with what they found that shortly thereafter, the company implemented the Hughes Circles Program.

The guidelines established by the Hughes Circles Program as stated by Kohler and Wells are as follows:

1. Each group is to structure its own circles within program guidelines.
2. Circle membership and participation is voluntary.
3. The work-group supervisor is the circle leader when feasible.
4. A circle facilitator--always a company employee--is not from the same work area, but may be from the same department.
5. Leaders and facilitators participate in training workshops before implementing their circles.
6. Circles are composed of from three to twelve members.
7. Circles hold weekly one-hour meetings on company time (Kohler and Wells:1982:313-314).

Hughes Aircraft's experience with Quality Circles perhaps can be best summed up through the statement of the facilitator for Quality Circles based in the area of manufacturing:

> These people, who are your most important asset, will reward you if given the opportunity. Their problem-solving skills are being developed with each new endeavor. The process of problem identification and solving can be a very slow and frustrating experience for the circle members; however, it gives each one of them the opportunity to speak up, to be heard, and see their suggestions implemented (Kohler and Wells:1982:321).

Kohler Company, with headquarters in Kohler, Wisconsin, has developed a new employee problem-solving (EPS) program. Currently, eight departments are involved in this program and represent various divisions and plant locations throughout Kohler Company.

The purpose of Kohler Company's EPS program is similar to the objectives of other Quality Circles programs and is geared to offering employees who participate the following: (1) training in problem solving and problem analysis, (2) a method to eliminate problems that they are confronted with daily, (3) practical application of knowledge gained through worker experience, (4) the opportunity to present problems/solutions directly to management, and (5) personal growth (EPS--Employee Problem Solving:1982:1).

American business, government, and industry are incorporating Quality Circles because many Japanese companies have used them in the last 20 years to sharply increase product quality, employee morale, and productivity. Some U.S. companies that have introduced Quality Circles in the last four or five years are reporting they improved productivity by as much as 40 percent (Johnson:1981:68).

Nonmanufacturing companies, however, have had little experience with Quality Circles. Alvin Goldberg, executive vice president and chief executive officer of Mt. Sinai Medical Center of Greater Miami, Miami Beach, Florida, believes that middle managers and department heads should give up some of their decision-making and problem-solving responsibilities to employees. Mr. Goldberg and his management staff deal with formal recommendations prepared and presented by various departmental committees whose members have invested a lot of time in their problem solving. Goldberg sees the Quality Circles movement as an opportunity to revive participative management in the hospital industry.

Norma Ederer, director of Human Resources, Mt. Sinai of Miami, states the following, based on their experience with Quality Circles:

> 1. The most important element in a Quality Circles program is top management commitment.
> 2. The second most important element is commitment by the Quality Circles trainers.
> 3. The third most important element is corporate patience. Corporate giants have found that building an organization isn't like building a house. Circles need time to learn the techniques and go through the statistical processes to avoid the pitfalls of snap decision making (Johnson:1981:69).

The hospital executives also reported that when employees are given bigger voices in the problem-solving process, managers who have been trained to identify problems and put out fires often feel their power is diluted. Employee involvement frequently is perceived as a threat to first-line supervisors and managers and that the good results of streamlining an organization can be lost in the threatened manager's fear of being criticized for not having come up with the good idea first.

Although Quality Circles have been used frequently in manufacturing, they have also been employed successfully in banks and service organizations. They can be implemented just as effectively in white-collar operations as in blue-collar operations.

The concept of Quality Circles is firmly grounded in the behavioral sciences. It is consistent with many of the management theories of Maslow, Herzberg, and McGregor which are based on the belief that employees must be responsible for their own work and work quality. It is generally accepted that the absence of this sense results in significant motivational problems among employees.

The Quality Circles concept is also the answer to the complaint voiced most consistently by American workers as reported in a study supported by the U.S. Department of Health, Education and Welfare in the early 1970s. This research found that American workers complained that their superiors failed to listen to them when they made suggestions for improving work processes. According to this study, workers feel that their bosses demonstrate little respect for their intelligence; superiors are said to feel that the workers are incapable of thinking creatively about their jobs (Quible:1981:10).

Honeywell Incorporated has developed a humanistic approach to management called "humanagement (Pascarella:1981:34)." Quality Circles are the most obvious evidence of Honeywell's humanagement process and the success it can bring. Nearly 300 teams are now in full swing in Honeywell's U.S. plants. The 300 additional Quality Circles in Honeywell's plants in Japan were not launched until 1977. Better working conditions, greater involvement in decisions surrounding their work, and a greater community spirit are good reasons for worker interest. Management interest beyond improving the work environment, obviously relates to improved productivity. Dr. James Renier, president, Control

System, Honeywell Incorporated, gives these examples of Quality Circles payoffs:

> 1. Ten teams at one facility improved assembly productivity by 46 percent over two years and reported improvement in communication, cooperation, and attitude.
> 2. At another plant, 28 teams reduced assembly hours in one year equal to a savings of $625,724.
> 3. In nine months, 11 teams at a third facility implemented solutions to 109 production problems. They documented $86,430 in savings, a 36 percent reduction in assembly costs, and a significant improvement in attitude in working climate (Pascarella:1981: 35).

Honeywell's human-resource people are studying the conditions and types of people necessary to provide the best setting for establishing Quality Circles. One of the big questions is what to do to sustain Quality Circles that have been effective for seven years--one that perhaps has dealt with 95 percent of the obvious problems. This concern is expressed by workers, first-line supervisors, and upper management alike. Some possible answers include: a team may meet less frequently, it could go dormant for a while, or new leaders or new members could be circulated through it.

The Milwaukee Sentinel reported in its October 1, 1982, issue that the southern Wisconsin area has the highest concentration of Quality Circles companies in the nation according to the Management Resources Associations, Inc., a Milwaukee-based group of about 800 business institutions that provides professional services for its members. Leading the 130 companies in the area that now have certified Quality Circles facilitators on their payrolls are A. O. Smith Corporation, which alone has 180 Quality Circles involving a total of 2,800 employees or about 50 percent of its workers in the area. Among other Wisconsin employers, Mercury Marine has 65 circles with a total of 600 employees; Harley-Davidson, 40 with 280; J. C. Penney, 19 with 156;

McGraw-Edison, 20 with 140; St. Luke's Hospital, 15 with 130; Briggs and Stratton Corporation, 13 with 130; Time Insurance, 12 with 106; and Crucible Steel, 7 with 100. James Gutman, business news editor of the Milwaukee Sentinel, reported that more and more companies are opting for the concept as a way to meet foreign competition, cope with low employee enthusiasm, and win back America's past reputation for product quality (Gutman:1982:7).

Many American workers ask the question: Can Japanese management techniques fit into the American way of doing business? At the Soy-sauce Producing Facility of Kikkoman Foods, Inc. (Walworth, Wisconsin), a blend of East and West has helped the company achieve an astonishing low rate of absenteeism, a low rate of turnover, and a high degree of employee satisfaction--all important elements of the productivity equation. Kikkoman is one of the first Japanese-owned plants operating in the United States.

Many critics claim that Japanese management techniques are so successful because they are based solely on the concept of lifetime employment and the seniority-wage system. Dr. Danji Fukushima, the company's vice president and general manager, dismisses the notion because the above-mentioned factors are not present in the U.S. facility. Dr. Fukushima attributes the low rates of absenteeism and turnover to the steps the company has taken to involve employees in decision making and to build employee loyalty. By respecting worker expertise and allowing them to participate in decisions, any company can unlock a whole new source of productivity-improvement ideas. When employees share in the process, they feel a more important part of the company which in turn motivates them to work with greater productivity (Productivity Improvement Bulletin:1982:5).

Under the Japanese system, the decision-making process starts at lower levels of management. In the American system of management, it seems that only top management is a decision maker; and the production manager is often just a go-between. At the Kikkoman Plant, top management has delegated the day-to-day responsibilities of each department to its production manager. Each manager reports to top management all important decisions he or she will make or has already made. Top management plays a role of coordinator. There are two benefits to this method. First, production employees recognize a manager as someone accessible and who has an important affect on production and working conditions. Therefore, Kikkoman employees feel free to provide input and offer suggestions.

Dr. Fukushima stated that:

> . . . employee interest will never be sacrificed for quick profits or other short-term objectives; "this respect and consideration for each individual can be found in our policies and our daily work practices." If there is a business slowdown that requires curtailed production, he says, hours and/or pay are reduced for all individ-uals--top to bottom. Layoff, or the last-hired, first-fired syndrome, is not considered a viable option (Productivity Improvement Bulletin:1982:6).

Quality Circle outcomes and limitations. Quality Circles bolstered low quality and low productivity in Japan; and some people in the United States object to the statement that Quality Circles can do the same thing here. Their contention that Quality Circles can't function in the United States is based upon the fact that we don't have the same style of management, and workers in the United States have a different attitude toward the job.

Japanese cultural traits have obviously assured the success of their circle program which does not necessarily mean that Quality Circles will not work in the United States. American workers may have attitudes different from their Japanese counterparts; but when properly stimulated and channeled, American workers can make the U.S. version of the circle succeed.

Listed below are statements indicating what motivates Japanese workers to have a positive work attitude:

1. I am always part of a group.
2. I must carefully observe customs.
3. Work is good for its own sake.
4. I must strive for perfection.
5. I am loyal to my company.
6. I am a disciplined person.

For Japanese workers, the Quality Circles are another important group to which they belong and within which they feel obligated to contribute to the very best of their abilities. Japanese employees quickly accept management's invitation to join a circle. They see the invitation not as an order but as an indication of the company's concern. Having joined, the Japanese workers resolve to contribute, regardless of personal inconvenience, because it's for the good of the company family as well as good exercise of self-discipline.

The loyalty to the company is a strong Japanese trait, and for good reasons. Employers traditionally provide lifelong employment. This makes the workers members of a large, closely knit company family towards which they feel a degree of allegiance, second only to the loyalty to their real family.

In comparison, here is a list of what U.S. workers say about their job:

1. I am an individual.
2. I do as I please.
3. Work is good for what I get.
4. Protection isn't always practical.
5. I work where the money is.
6. I don't like discipline.

The question is whether these attitudes point to a probable failure of Quality Circles in the United States. If we take a look at what our workers are really saying about their attitudes, we can see that Americans are indeed suited for circle cooperation of work. For example, Americans proclaim their individuality. Far from being negative, this trait allows workers the freedom to voice their opinions within the circle, ensuring careful examination and representation of different points of view.

There is a tendency to believe that the increased psychological satisfaction workers derive from greater participation in decision making and peer recognition are in themselves sufficient incentive or reward to induce and maintain participation in Quality Circles. Gerald D. Klein reports that it is his view that companies can reduce, although not necessarily eliminate, rank and file skepticism, fears of exploitation, and consequent resistance to Quality Circles programs by offering to share with workers a healthy part of the annual cost savings and productivity gains created by these programs. While the importance of the monetary incentives may diminish as certain intrinsic rewards from the process are realized, offering such incentives is certainly a potentially powerful tool to generate initial employment interest and involvement (Klein:1981:11-14).

Quality Circles originated in the United States. If not for the development of American management theories, Japan might not have formulated the circle idea. So cultural differences appear to have little affect on Quality Circles. They cannot determine whether a circle will succeed or fail. Management's attitude toward the concept is the determining factor (Bureau of Business Practice:1981:12-14).

Today, the impact of the Quality Circles philosophy is plain to see. Japan has set quality standards in electronics, photographic equipment, even steel and automobiles. Productivity figures are no elusion. A nation that once had trouble peddling cheap, shabby produce leads the whole industrial world in productivity; and that supremacy shows few signs of diminishing.

A Honeywell executive commented:

> The Japanese built the system mostly on a statistical-quality basis. We have also moved into the quality work life. We want to get our people talking more and want to get them listening more (Supervision:1981:9).

There is no need to describe the need for improvement throughout the United States business environment in an age of serious economic problems. We no longer are the world leader in the manufacture of steel, automobiles, machine tools, and several other basic products. Unless productivity in major industries increases and sales here and abroad accelerate, such goals as slowing the spiral of inflation, successfully competing in world markets, financing national/social goals, and creating jobs for almost fifteen million people who will join the employment roles in the 1980s will be all the more difficult.

American workers are better educated, more individualistic, and less responsive to authority. They aspire not only to improve work life but also to more meaningful jobs, offering a personal sense of participation in decisions that affect them.

Japan, with a heavy concentration of manufacturing organizations, developed the Quality Circles process within their manufacturing plants. Early development of Quality Circles in the United States was also concentrated in manufacturing organizations. However, in the United States there are more service industries (banks, hospitals, schools, insurance companies, governmental agencies, etc.) than manufacturing industries. Although the major objectives of the Quality Circles process appears to be applicable to the service industries, historically there is no broad base of research for applying this concept in the service industries.

Development of Quality Circles--United States Educational Institutions and Government

Considerations which fostered consideration of Quality Circles. Productivity is a word not many educators like to use. Students are people, not machines. But just as American businesses and industries have seen U.S. productivity reduced drastically in the work market, public schools have witnessed a similar decline in student achievement. Today the American consumer is demanding quality production from industries and agencies such as the autos, electronics, ship building, banking, etc. That same consumer expects students to graduate from our schools with the skills to succeed in a highly technological society. That is the measurement of our educational productivity (Bellanca:1982:-31-32). Now seems to be an opportune time for implementation of Quality Circles in educational/governmental agencies and organizations because of the recognized need to make even better use of property taxes and other sources of revenues.

It may be that the application of the Quality Circles concept will assist in the public sector. The true test for the effectiveness of the Quality Circles concept in a public sector will be how well these organizations combine the concepts of cost effectiveness with the people element; i.e., trust, respect, and encouraging the development of self-reliance and competence down and in the ranks (Burke:1982:32-33).

Increased employee participation in decision making and problem solving will require personnel within educational institutions to acquire appropriate skills. These skills include: (1) ability to create a high level of awareness on the part of all workers involved; (2) ability to recognize potential causes of loss or waste and ways to reduce or eliminate these causes; (3) business skills, such as those used in planning, organizing, problem solving, scheduling, ordering, goal setting, using resources, budgeting, and managing projects; (4) important skills vital to increasing quality and quality control include brainstorming, gathering data, pareto analysis, cause and effect diagramming, central-tendency analysis, ordering, and presenting information; and (5) communication skills (Huddleston:1982:43).

Applications of the Quality Circles process in U.S. educational institutions and government. Educational employees, like workers in other fields, have grown up during an era of intense focus on individualism stemming from many societal factors. These employees demand to be recognized as important, invaluable individuals whose presence within the organization makes a difference. The Quality Circles process can assist in classroom and curriculum issues, evaluation issues, and improve the effectiveness of the central administrative tasks.

The Northwest Educational Cooperative in Arlington Heights, Illinois, an intermediate school agency which serves more than 500 midwestern school districts, states that their organization is the only Quality Circles facilitator that provides training for educators by educators (Northwest Educational Cooperative:1982:2). Their interest in improving quality and productivity in public schools has been brought on by the criticism that is being leveled at the educational establishment on the quality and productive abilities of educational programs and related services.

Eldon Schafer, president of Lane Community College in Eugene, Oregon, reported in the Association of Community College Trustee publication, The Advisor, that the Quality Circles way dramatically increases the likelihood of successful outcome compared to the classic higher education committee which is simply appointed. Recent Lane Community College Circles resulted in:

1. A curriculum review and development process for a department which found itself adding courses more on whim than on a carefully thought-out plan.
2. A computerized testing and scoring process for a department whose members became concerned over the growing amount of time devoted to testing instead of teaching.
3. A system for coordinating enormous amounts of information about classes, instructors, registration policies, etc., for a non-credit department which had outgrown the possibility of going to one person to find out what was going on.
4. A plan scheduling classes throughout the week for a department which suddenly discovered that most of its class load occurred on Monday, creating an overload for a number of staff.
5. A process of rotating instructional aircraft from teaching status to maintenance and back for a department which too often found its equipment out of service when needed.

6. A design for better campus-wide communication for a department which needed improved understanding, acceptance, and support for its program (Schafer:1982:1).

After eleven months of investigation, study, and planning, a pilot Quality Circles program was implemented within the Central Piedmont Community College (CPCC) Media Production Department in December 1980. The enthusiasm and success of the pilot circle process led to a grant proposal to implement Quality Circles throughout the college. Funded in July 1981 by the Occupational Education Research Office, Division of Planning and Research Services, North Carolina Department of Community Colleges, this grant provides for circles in instructional, operational, and administrative functional areas.

Principle objectives of Quality Circles at CPCC were:

1. Orientation: To orient all top, middle, and first-line management to Quality Circles concepts and their potential for education.
2. Advisory Committees: To establish an advisory committee which will develop and recommend Quality Circle policy to top level administration.
3. Facilitators: To provide two or more resource persons trained to assist in circle formation, training, and facilitation.
4. Circle Leaders: To train six or more Quality Circle leaders.
5. Initial Circles: To implement six or more Quality Circles.
6. Training Materials Development: To produce audio-visual and print instructional materials specific to Quality Circles in education.
7. System-Wide Awareness: To build an awareness among North Carolina Community College System educators during the project year of the Quality Circle process.
8. Evaluation: To assess the effectiveness of the project organization and procedures during and at the end of the project.
9. Plan for System-Wide Implementation: To provide a written plan at the end of the project year for implementing Quality Circles in interested system institutions (Moretz:1982:68).

Burke reported that governmental agencies are setting up Quality Circles motivated by the following:

1. Building trust takes time and Quality Circles have the ingredients to make things happen.

2. Government is labor intensive; if we utilize all these hands, we have a better chance of promoting positive change.
3. We have to find a way out of the labor-management conflict that is paralyzing us.
4. We have to find new ways to cut costs if cities are going to continue to provide service (Burke:1982:32).

The Quality Circles concept, a new experiment for service industries, is a pilot project of the city of Dallas, Texas, which provided Quality Circles training to all city administrators and midmanagers so the program could be implemented in all city departments. Chief of Police Glen D. King selected the Southwestern Patrol Division for the pilot program. Sergeant Tom Higgins, supervisor of the Sector 410 officers, stated:

> This is not a gripe session. We're here to identify problems facing officers and develop feasible solutions. Our objectives include improving morale among field officers and utilizing work creativity. Our Quality Circle is a cop-in, not a cop-out (Quality Circles--Public Sector Update:1981:1).

Quality Circles outcomes and limitations. Educational Quality Circles may seldom achieve the dollar savings sometimes reported in U.S. industry, but they appear to help improve communication and morale and increase productivity. They are viewed as a component in a management philosophy which encourages employee participation, improved planning, and more effective human resource management.

Industry has discovered that one hour per week devoted to Quality Circles does result in increased productivity. Dr. Ishikawa, one of the chief creators of Quality Circles, states:

> Quality Circles activities have no social, economic, or cultural limitations. Human beings are human beings. The point of view is essential for those who would bring Quality Circles into schools. For Quality Circles cost few direct dollars to implement. What they really cost is a commitment to solving major productivity problems by involving people in the process of change. That process may require a major shift in how teachers, aides, custodians, and students are managed in schools (Bellanca:1982:33).

The Quality Circles approach has proven effective in business and industrial applications in the U.S. and in Japan where it was first implemented over 20 years ago. At this time the process has not been implemented widely within educational institutions, possibly due to dealing with the intangibles of education as compared to the successes in the business/industrial environment.

In addition to incorporation of the Quality Circles concept in the management of educational institutions, it is highly likely that educational institutions will be required to produce graduates skilled in participative management concepts. As American businesses and industries are making important changes in management styles in an effort to boost productivity, there will be a shortage of skilled workers with the skills necessary to participate and succeed in these new management environments. Community colleges and technical schools need to prepare themselves in order to train and to retrain the American work force in new skills required for involvement in decision-making and problem-solving concepts.

Implications and Interpretations of Quality Circles in the United States

Comparisons between Japan and U.S. Quality Circles process.

Some social and management scientists believe that Quality Circles and other Japanese management practices are so much a byproduct of Japanese history and culture that exportability is dubious. Professor Robert Richard Rehder, dean of the Graduate School of Management at the University of Nex Mexico, believes substantial barriers exist:

> Japanese culture and management--is "group centric," while American culture--and management--is "I centric" . . . This he suggests, brings a considerable style conflict into play (Zemke:1980: 18).

A number of differences exist between management styles of the two countries that may explain why there is concern regarding the Quality Circles acceptance and benefits in the United States. Several of these differences are included here:

1. Japanese companies hire personnel for life, have loosely structured management, vaguely defined job assignments, and strive for consensus in all decisions. American companies, by contrast, hire with a project orientation, insist on highly specified organizational structures, tightly defined job responsibilities enforced by American unions, and honor competition and individuality.

2. Rewards in Japan come from longevity and position and in America from productivity and individual value (Zemke:1980:18).

3. One of the most important features of Quality Circles in Japan is that they did not originate with senior management. They developed from a voluntary, grassroot movement of workers in middle management from across the nation (Ohmae:1982:16).

4. Managers in the United States are committed to solving short-term problems rather than investing in programs that will tackle longer-range, more serious difficulties. Critics of the American Quality Circles movement are already predicting that America's circles won't have this long-term success as their Japanese counterparts because of this aspect (Wood:1982:98).

5. Howard Lim, in his research on skill profiles of Japanese management, reports that there are different philosophies between Western and Eastern managers. The Eastern managers (Japanese) are more concerned in ensuring existence of all conditions necessary for an effective operation, regardless of the consistency between them. The

Japanese style of managing utilizes more human characteristics than the Western (Lim:1981:19-21).

6. A skills profile approach to Japanese management has one primary value: to develop more managers to experiment with Eastern ideas. A skills profile has implications for individual responsibility and comparison. The history of Western management over the past two decades shows that successful fads do not add up to progress (Lim:1981:19-21).

After considerable examination of companies in both the United States and Japan, William Ouchi identifies what he considers to be prototypical organizational models in both societies. The most significant features of the American (A) model and the Japanese (J) model identified by Ouchi are listed below (Anderson and Anderson:1982:16):

American Organization	Japanese Organization
Short-term employment	Lifetime employment
Rapid evaluation and promotion	Slow evaluation and promotion
Specialized career paths	Nonspecialized career paths
Explicit control mechanisms	Implicit control mechanisms
Individual decision making	Collective decision making
Individual responsibility	Collective responsibility
Segmented concern	Holistic concern

Ouchi reports that if we accept the premise that strict adherence to the Japanese style of management will not be beneficial in the United States, we should develop an American style that will make us competitive again. The proposed organizational form to accomplish this is the Z-type organization. This mixture will have the following characteristics: long-term employment, consentual decision making, individual responsibility, slow evaluation and promotion, implicit and formal control and explicit formalized measures, moderately specialized career paths, and holistic concern including family (Anderson and

Anderson:1982:17). In order for the Z-type of organization to be effective, employees at various levels of responsibility will need participative management skills such as those used in the Quality Circles process.

One of the major concerns about Quality Circles is that they work in Japan largely because of the particular character of the Japanese worker but that American workers do not possess the loyalty and zeal of the Japanese worker. However, several arguments can be made in support of Quality Circles for U.S. industry:

1. Americans often are characterized as being a pragmatic, problem-solving people. Quality Circle problems provide the framework in which these characteristics can be mobilized toward solving work-related problems.
2. Americans today are not necessarily the individualistic loaner types portrayed by many American westerns. Group-oriented, participative techniques such as circles may be quite compatible with the realities of working in an organizational setting.
3. The question is not whether Quality Circles can meet the productivity challenge, but whether management can. The time definitely has arrived for creative, innovative thinking on the part of American managers. The dramatic rise of the Quality Circle in American industry is a healthy sign that we are learning one of the most important skills of Japanese managers--the ability to learn from the experiences of others (Shimada, Jenkins, Goslin:1981:39).

Limitations of the Quality Circles process in the U.S. The Quality Circles process in decision making and problem solving is a technique that the Japanese learned from American managers in the 1950s. A great volume of research supports its effectiveness in American organizations.

Sashkin stated in his research on participative management approaches:

> Some problems have, however, appeared with respect to the Quality Circle (QC), primarily because of the fad-like manner in which American managers and organizations have seized upon it as a panacea for management and organizational problems. Expectations that QC approach will solve all of management's problems are, of

> course, unrealistic, and are bound to be unfulfilled in actual practice. Moreover, the rapid spread of the QC approach has often resulted in poor-quality implementation of participative group problem solving by trainers and consultants who neither fully understand the approach nor have the skills needed to effectively train people to use it.
>
> A key issue in the success of participative group problem solving is the training of employees and supervisors in effective group problem-solving methods and skills. The failure to provide such high-quality training may ultimately create a backlash from managers against the QC approach when these inadequate "installations" begin to result in failures (Sashkin:1982:58).

Blake and Mouton reported in their book entitled Productivity: The Humanside that there are limitations inherent in the Quality Circles approach, particularly when employees already have a negative attitude toward management and the company.

> Many discussions are gripe sessions, not sessions in which constructive thinking is done about how to advance productivity. Beyond that, many employees wait for implementation of suggestions that may not be practical, given the cost and budget available for them (Blake and Mouton:1981:6).

Management cannot regard the Quality Control Circles process as a means of speeding up production or achieving any other company goals. Experts do indicate that the reaching of such company objectives may, however, be a byproduct of a Quality Control Circle.

The editors in the March 1982 CPA Client Bulletin stated the following:

> 1. A circle should not be set up for the purpose of gaining any single goal--it works best as an on-going operation.
> 2. It should be persuaded to refrain from criticism, either of its own members, of other plant workers, or people in management.
> 3. A Quality Control Circle should not expect to dictate company policy--that continues to be management's function.
> 4. Quality Control Circles sound like a fine idea, but when you summarize the elements of a Quality Control Circle Program--employee enthusiasm and efforts stimulated by workers being given a share in the problem-solving process, treated as truly a part of the team--doesn't this great innovation remind you of something familiar? Like the way things have always been handled in thousands of small businesses (CPA Client Bulletin:1982:2)?

A multitude of consulting organizations and resource groups across the country are offering everything from inexpensive package programs to complete in-house seminars designed to train facilitators to introduce and implement Quality Circles within various service organizations including banks, hospitals, insurance companies, etc. Both the public and trade press have been quick to point out these organizations' successes by implementing Quality Circles; however, they really haven't given much ink to the problems that have and can result as a result of Quality Circles implementation.

The people at Consulting Associates, Inc., one of the many resource groups actively involved in helping organizations initiate the Quality Circles process, claim that nearly one-third of all Quality Circles in this country fail. Many top managers in the United States read about the tremendous successes some organizations have achieved with Quality Circles, and they immediately implement the process in an effort to raise corporate productivity levels. These managers implement one or two circles which get them off to a "roaring" start, only to end up "fizzling" out because management has not been properly prepared to incorporate the concept or to utilize participatory decision-making techniques (Cook:1982:4).

Hewlett-Packard, an electronics company involved with Quality Circles, indicated that it was not a simple program, for if it were, it would have been done long ago. The company found that in many cases, business and industry has a tendency to start a program, walk away, and assume it is going to run by itself. Hewlett-Packard's experience with Quality Circles indicates that it takes a considerable amount of time to implement and maintain (Burck:1981:62-68).

Some organizations with Quality Circles programs are not satisfied with their results. Common complaints are: (1) management is not supportive, (2) the pay-off is not there, and (3) people lose interest.

Sometimes Quality Circles efforts run into problems because their sponsors argue for them solely on the grounds that they will improve organizational processes and the quality of work life. Resistance is created because even though this is expressed, it is easier to emphasize improvement in bottom-line results such as product quality and productivity. Quality Circles facilitators and managers need to concentrate more attention on the results to be achieved. To do this, managers must provide effective management leadership by creating a vision of what results are to be achieved and asking people specifically to achieve these results.

Darwin Gillett, management consultant, stated that effective management leadership can inspire Quality Circles efforts by:

1. Creating a vision of improved performance by agreeing on what the organization wants to accomplish. Unlike a set of goals, however, a vision provides a more substantial picture of where management wants the organization to be.

2. Setting priorities and establishing focus needed to allow employees to dig in and work in depth on improvement.

3. Asking for--and expecting better results from employees. Managers need to say very clearly and specifically: "Here is what I expect you to achieve."

4. Expecting the best from people. Managers should focus on the potential of their people, give power to that potential, and help their people gain the confidence and courage needed to risk venturing

into new territory and to bring their potential into reality (Gillett:1983:22-24).

Business Week, in its January 11, 1982, article, indicated it is too early to predict whether the Quality of Work Life Management (Quality Circles) will emerge from the recession healthier than before or attenuated. A few unions, such as the United Electrical Workers, have a national policy of refusing to cooperate in Quality Circles or Quality of Work Life Committees at Westinghouse and General Electric Company, although some of its locals are involved in programs. Other unions have adopted a clear-cut national policy on Quality of Work Life Programs and only a small number such as UAW actively advocate it. But what seems to be emerging is a trend of local option. If rank and file members and the local union leadership think that a collaborative approach will best protect jobs in highly competitive industries, they tend to push ahead, regardless of national union policy (Business Week:1982:109).

At Nashua Corporation in New Hampshire, enthusiasm for Quality Circles is tempered by the view that they can't do everything. This manufacturer of office systems, supplies, and various other high-technique products adheres to the views of Dr. W. Edwards Deming, a world-renowned statistical consultant in quality and productivity. Nashua brought in Dr. Deming to apply his philosophy that 85 percent of all quality and productivity problems are actually management problems. The remaining 15 percent are localized problems, and that's where Nashua put Quality Circles to work. According to William J. Kelley, Nashua's quality programming coordinator, Quality Circles work from the bottom up; but major solutions must come from the top since they involve too many parts of the company to be handled piecemeal (Wakin:1982:45-48).

Eldon G. Schafer, president, Lane Community College, Eugene, Oregon, stated that the Quality Circles process can work for colleges with the following adjustments and considerations:

> 1. Breaks for Christmas, spring, and summer wreak havoc with the momentum of a QC.
> 2. Part-time employees tend not to take part because regular staff are paid and they aren't.
> 3. Dealing with decisions regarding intangibles can sometimes take a discouragingly long time (Schafer:1982:6).

Summary

In summary, the review of literature related to the Quality Circles process indicates that Quality Circles can be defined as groups of employees who meet on a regularly scheduled basis to discuss work-related problems. They identify problems, investigate causes, and recommend solutions to the most senior, decision-making body within their work organizations. The Quality Circles process can be applied to any group of employees who work and function within the normal organizational pattern.

There are a number of approaches for creating employee participation opportunities within the decision-making and problem-solving processes. One of the approaches currently receiving attention and being implemented in a number of agencies and organizations is Quality Circles. Quality Circles is a participative management technique that the Japanese learned from American managers in the 1950s. It rose from the great mass of knowledge concerning employee needs, power, and potential as embodied in the teaching of Maslow, Herszberg, and McGregor.

The wisdom of Japanese industrial managers, led by the Union of Japanese Scientists and Engineers (JUSE), enabled them to see the value of a process which develops quality of production and increases quality of work life. With an emphasis on quality, a trust in the expertise of employees, and a will to succeed, the so-called "Junk Merchants of the World" of thirty years ago have become the most productive and competitive industrial complex in the world today.

The Quality Circles approach of utilizing employee involvement to resolve manufacturing problems found its way back to the United States in 1973. Lockheed Aircraft was the first U.S. manufacturing firm to successfully introduce Quality Circles. This participative management approach is gaining popularity throughout the world not only in industrial organizations but is also being utilized in service organizations.

Educational managers are finding that the Quality Circles approach recognizes the true expertise of employees working in all facets of their organizations. It sets up well-conceived procedures to use in reaching organizational goals and fosters a trust level of operation that enhances working conditions, productivity, and morale.

Recently, some literature related to Quality Circles has stated that the approach has not worked in all U.S. organizations. Quality Circles failures are attributed to poor communications, limited training, lack of follow-up on projects, poor middle-management support, lack of union cooperation, too much expectation from management, and little interest on the part of employers and employees in improving the quality of work life.

Chapter III

PROCEDURES AND METHODOLOGY

The purpose of this study was to determine the effectiveness of a Quality/Performance Circles model in decision making and problem solving at Lakeshore Technical Institute and to evaluate the implementation process. This chapter will do four things. They are: (1) describe the design used to evaluate the effectiveness of a Quality/Performance Circles model and implementation process, (2) state the research hypotheses, (3) describe the procedures used to collect the data, and (4) specify the procedures used in treating the data.

Design of the Study

The basic method of applied research utilized in this study was developmental, involving two components of evaluation. The first component was basically a pretest--treatment--posttest design utilizing an attitude questionnaire as a pretest and a posttest to evaluate the effectiveness of the Quality/Performance Circles process model. This component of evaluation is supported by Jenkins and Shimada, who reported:

> . . . attitudinal changes that employees experience from participation in Quality Circles can be measured. Ideally, work-related attitudes should be measured before and after Quality Circles are formed and functioning (Jenkins and Shimada:1981:3).

A management style inventory was also administered as a part of the pretest to determine the management style of participants.

The second component was the evaluation of the implementation process of a Quality/Performance Circles model. In order to evaluate the implementation process, a treatment (implementation of the Quality/Performance Circles process) followed by a posttest questionnaire was utilized to measure the training, acceptance, support, and impact of the Quality/Performance Circles process.

One of the key elements of a successful Quality/Performance Circles process is keeping the participation voluntary. Therefore, all participants in this study were volunteers from the management and nonmanagement staffs of the Lakeshore Technical Institute (LTI).

All management and nonmanagement staff of LTI were informed of the intent to implement a Quality/Performance Circles process model during the 1982-83 school year. The total full-time employees of LTI at the time of this study was 45 management and 240 nonmanagement staff. Of the 45 management staff, 39 volunteered to participate. Reasons for six management nonparticipants were: (1) conflict with their work schedules, and (2) some management staff did not feel comfortable with Quality/Performance Circles and wanted to measure the impact of the process at a later date. The nonmanagement staff (faculty and support services staff) were allotted a limited number of openings to participate in the study. The reasons were: (1) limited resources available for training, (2) the intent to involve as many management staff as possible in the training and participation in the Quality/Performance Circles process during the first year of implementation, and (3) lack of trained LTI Quality/Performance Circles facilitators. Of the 240 nonmanagement staff, 20 openings were available for Quality/Performance Circles training; and ten faculty and nine support staff of designated divisions volunteered and were invited to participate.

Research Hypotheses

The study was designed specifically to answer the research questions stated in Chapter I, page 10. These research questions were:

1. Is there a change in attitudes of Lakeshore Technical Institute personnel before and after involvement with Quality/Performance Circles; and if so, is it of a significant level?

2. Is there a change in attitudes between management and non-management classifications before and after involvement with Quality/-Performance Circles; and, if so, is it of a significant level?

3. Is there a change in attitudes toward the use of Quality/-Performance Circles techniques in decision making and problem solving between LTI personnel having different management styles; and, if so, is it of a significant level?

In order to determine the effectiveness of a Quality/Performance Circles model, the research questions were rephrased into the following research hypotheses:

Null Hypotheses

1. There is no significant difference between the participating LTI staff pre- and posttest scores of the four factors made up from responses to the attitude questionnaire following involvement with Quality/Performance Circles.

2. There is no significant difference in the posttest scores related to the four factors making up the attitude questionnaire

between the LTI management group and nonmanagement group following involvement with Quality/Performance Circles.

3. There is no significant difference in the posttest scores of participants with respect to the four factors making up the attitude questionnaire between LTI personnel having different management styles following involvement with Quality/Performance Circles.

Alternative Hypotheses

1. There is a significant difference between the participating LTI staff pre- and posttest scores of the four factors made up from responses to the attitude questionnaire following involvement with Quality/Performance Circles.

2. There is a significant difference in the posttest scores related to the four factors making up the attitude questionnaire between the LTI management group and nonmanagement group following involvement with Quality/Performance Circles.

3. There is a significant difference in the posttest scores of participants with respect to the four factors making up the attitude questionnaire between LTI personnel having different management styles following involvement with Quality/Performance Circles.

Procedures for Collecting the Data

In order to implement and evaluate a Quality/Performance Circles System model within the Lakeshore Technical Institute, the following procedures were utilized:

1. The Lakeshore Technical Institute Board of Education was requested to approve the implementation of the Quality/Performance

cles process as a decision-making and problem-solving model for the 1982-83 school year (see Appendix C).

2. All personnel of the Lakeshore Technical Institute were invited to attend a Steering Committee meeting in which an outside consultant covered the history, facts, theory, and realities of the Quality/Performance Circles System. The outside consultant, president of Measurable Performance Systems, had extensive experience in training of business, government, and industrial employees on the Quality/-Performance Circles management model.

3. A review of related literature was performed. While there is a wealth of information (some textbooks and a greater number of periodicals) on the Quality/Performance Circles management model, the review of current literature revealed very few studies completed on Quality/Performance Circles effectiveness and evaluation.

4. A pretest attitude questionnaire (see Appendix D) was administered before the initiation of the implementation phase of the Quality/Performance Circles process (August 1982) to measure the initial participant attitudes pertaining to the decision-making and problem-solving processes within the Lakeshore Technical Institute. This questionnaire involved the use of a numerical Likert-type scale of one to five with five indicating great agreement.

5. A posttest attitude questionnaire (see Appendix D) was administered during the fourth quarter of the Quality/Performance Circles process (April 1983). This questionnaire was identical to the attitude questionnaire administered at the start of the implementation of the Quality/Performance Circles process.

6. A management-style inventory (see Appendix E) was administered at the beginning of the implementation stage of the Quality/-Performance Circles system model to determine the management style of LTI personnel involved.

7. A posttest questionnaire (see Appendix F) to measure the implementation of the Quality/Performance Circles process model was administered during the fourth quarter (April 1983). This questionnaire was designed to measure and obtain data and information regarding the training, acceptance, support, and impact of the Quality/Performance Circles process.

8. LTI personnel participation selection in the Quality/Performance Circles process was according to work classification. Seven individual Quality/Performance Circles were developed with 58 Lakeshore Technical Institute management and nonmanagement personnel participating in the training and subsequent process.

9. The questionnaire used as the pretest and posttest (see Appendix D) was pretested by submitting the questionnaire to three University of Wisconsin management professors and a comparable group of LTI personnel not participating in this research project. The pretest sought to improve validity and reliability of the instrument used. Comments and suggestions of the persons helping with the pretest were as follows:

a. Include definitions of management and staff in the introductory section of the questionnaire.

b. Pilot test the questionnaire with three or four LTI staff members who are typical of the group that will complete it but not participants of the Quality/Performance Circles process.

c. Develop reciprocals for items in which the feelings of one group toward the other group is desired.

d. Allow for identification of respondents according to work classification to provide for further analyses.

e. Rewording of various items of the questionnaire to increase clarity and understanding.

These suggestions and comments were used to make modifications to the original questionnaire. A second edition of the questionnaire was prepared and utilized in the pre- and posttest.

10. The management-style inventory (see Appendix E) used was the Managerial Philosophies Scale developed by Jacob Jacoby, Ph.D., and James R. Terborg, Ph.D., for Teleometrics International, copyrighted in 1975. The validity and reliability of this inventory has been determined, and normative data was developed effective January 1977.

11. Improvement of the validity and reliability of the posttest questionnaire (see Appendix F) designed to obtain comments regarding the training, acceptance, support, and impact of the Quality/Performance Circles process was accomplished by submitting the questionnaire to the curriculum and research specialist of the Lakeshore Technical Institute (LTI) and to a comparable group of 25 LTI personnel not participating in this research project.

12. The implementation and the evaluation of the Quality/Performance Circles system model during the one-year period (July 1, 1982, through June 30, 1983) was according to the following sequence:

a. Introduction of the Quality/Performance Circles process to interested employees (Steering Committee meeting, August 1982).

b. Selection of participants for each Quality/Performance Circle (August 1982).

c. Administration of the pretest questionnaire (see Appendix D).

d. Administration of the management style inventory (see Appendix E).

e. Training of participants (employee workshops, August-October 1982) (conducted by Measurable Performance Systems, Inc.).

f. Quarterly goals prepared for the facilitator (September-October 1982).

g. Quarterly conference (November 1982).

h. Follow-up session (November 1982).

i. Quarterly goals prepared for facilitator (December 1982).

j. Quarterly conference (January 1983).

k. Follow-up session (February 1983).

l. Goals turned in to facilitator (March 1983).

m. Quarterly conference (April 1983).

n. Follow-up session (April 1983).

o. Administration and evaluation of the posttest questionnaires (April 1983) (see Appendices D and F).

Procedures for Treating the Data

To evaluate the effectiveness of the Quality/Performance Circles system model, participating LTI staff members completed the 32-item decision-making and problem-solving attitude questionnaire (see Appendix D). All item responses were rearranged so that the most positive expected responses would be five regardless of the wording of the stem of the items. Example: number 11, "I feel that within the present decision-making/problem-solving process, management makes decisions without staff participation and consensus." The expected value was between one and three. In recording this response, the reciprocal was used (1:2:3:4:5 became 5:4:3:2:1).

The 32 items on the attitude questionnaire were grouped into four factors. These factors were:

1. Acceptance of staff in LTI decision-making and problem-solving processes.
2. Adequacy of communication in LTI decision-making and problem-solving processes.
3. Adequacy of LTI decision-making and problem-solving processes.
4. Capability and training of staff in LTI decision-making and problem-solving processes.

Each variable of the attitude questionnaire was grouped into one of four factors, and a total for each factor was calculated per respondent for both the pretest and posttest. This was done for each factor, for each work classification, and for each management style.

Testing of null hypothesis number one. A dependent t-test was utilized to compare the pre- and posttest scores of the total group on the four factors of the attitude questionnaire. The decision to reject or fail to reject the null hypothesis was based on the significance at the .05 level, using a two-tailed test.

To test null hypotheses numbers two and three, the following analyses was utilized:

1. Because of the possibility of no difference or significance between (1) management and nonmanagement groups and (2) between personnel having different management styles on any of the four factors of the attitude questionnaire, a discriminate analysis was required on the pretest scores for each hypothesis.

2. The testing of hypotheses numbers two and three also required the consideration of a multivariate analysis of covariance using as covariates any of the four factors of the attitude questionnaire that were significant on the pretest analysis for each hypothesis.

Testing of null hypothesis number two. As a discriminate analysis utilized on the pretest scores resulted in no significant difference between the management staff and nonmanagement staff on any of the four factors of the attitude questionnaire, a discriminate analysis was utilized on the posttest scores. The decision to reject or fail to reject the null hypothesis was based on the significance at the .05 level, using a two-tailed test.

Testing of null hypothesis number three. As a discriminate analysis utilized on the pretest scores resulted in no significant difference between personnel having different management styles on any of the four factors of the attitude questionnaire, a discriminate analysis was utilized on the posttest scores. The decision to reject or fail to reject the null hypothesis was based on the significance at the .05 level, using a two-tailed test.

Evaluation of the implementation process of a Quality/Performance Circles model. In order to evaluate the implementation of the Quality/Performance Circles system model, each participant responded to the training, acceptance, support, and impact questionnaire (see Appendix F). After all participants had responded to the questionnaire, raw scores for each of the 27 variables were recorded. The following statistical analyses were used:

1. Percentage of responses.
2. Mean and standard deviation of responses for each item.

The answers to the open-ended questions allowing respondents to give comments and suggestions were summarized (see Appendix G).

Chapter IV

PRESENTATION OF RESULTS

The presentation of results in Chapter IV has been subdivided two main categories. These two categories are: (1) Quality/Performance Circles Participants, and (2) Evaluation of Quality/Performance Circles Process.

Quality/Performance Circles Participants

A total of 39 management and 19 nonmanagement Lakeshore Technical Institute (LTI) staff participated in the Quality/Performance Circles training conducted by Measurable Performance Systems, Inc., during August/September 1982. At the conclusion of the two-day training session, 35 management and 13 nonmanagement staff volunteered to participate in the Quality/Performance Circles process during the 1982-83 school year. The LTI management staff who participated consisted of administrators, coordinators, educational specialists, support staff managers/specialists, and supervisors. The participating nonmanagement staff consisted of faculty and support services staff. Table 4.1 represents a breakdown of the number of participants completing the Quality/Performance Circles training and those participants completing the Quality/Performance Circles process during LTI's 1982-83 school year. Table 4.2 indicates the individually named circles and their composition.

Table 4.1

LTI Management and Nonmanagement Staff Participation in Quality/Performance Circles Process

	Participants					
	Management		Nonmanagement		Total	
Involvement	N	%	N	%	N	%
Quality/Performance Circles Training	39	(67.24)	19	(32.76)	58	(100.00)
Quality/Performance Circles Posttest Evaluation	35	(72.92)	13	(27.08)	48	(100.00)

Table 4.2

Quality/Performance Circles Names and Composition

Groups	Circle Name	Composition
Management	Big Band	6 Administrators
	Eclectic	6 Educational Specialists
	Lifeline	8 Support Services Managers
	Middlemen	8 Program Supervisors
	Synergistic	7 Program Coordinators
Nonmanagement	Pathfinders	4 Faculty
	Silver and Gold	9 Support Services Staff

Of the 58 LTI staff who completed the two-day Quality/Performance Circles training session, 48 volunteered to participate in the circles process during the 1982-83 school year. The goals/projects of the individual circles during the 1982-83 school year are shown in Appendix H.

Evaluation of Quality/Performance Circles Process

The LTI staff participating in the Quality/Performance Circles process completed two components of evaluation. The first component utilized the same attitude questionnaire as a pretest and posttest to evaluate the effectiveness of the Quality/Performance Circles within the four factors pertaining to the decision-making and problem-solving processes. The second component consisted of a posttreatment questionnaire evaluating the implementation process to measure the training, acceptance, support, and impact of the Quality/Performance Circles process within the Lakeshore Technical Institute.

Evaluation of the effectiveness of Quality/Performance Circles system model. The 32 items of the pre- and posttest attitude questionnaire were grouped into four factors. These factors were:

1. Acceptance of staff in LTI decision-making and problem-solving processes (items 1, 2, 3, 4, 5, 6, 26, 28, 30, and 32).

2. Adequacy of communication in LTI decision-making and problem-solving processes (items 7, 8, 13, 16, 22, 24, 25, and 29).

3. Adequacy of LTI decision-making and problem-solving processes (items 11, 12, 14, 15, 17, 18, 19, 20, and 27).

4. Capability and training of staff in LTI decision-making and problem-solving processes (items 9, 10, 21, 23, and 31).

Each variable of the attitude questionnaire was grouped into one of the four factors; and the data were expressed in terms of mean scores, standard deviations, and t-values for testing hypothesis one and mean scores, standard deviations, F-ratios, and levels of significance for hypotheses two and three.

Null hypothesis 1: There is no significant difference between the participating LTI staff pre- and posttest scores of the four factors made up from responses to the attitude questionnaire following involvement with Quality/Performance Circles.

The composite calculated t-value for the dependent t-test was 6.61. This indicates a significant difference in the change in attitudes of the participating LTI staff following involvement with Quality/Performance Circles. Since the calculated t-value (6.61) exceeds the critical t-value at the .05 level (1.96), the null hypothesis was rejected and the alternative hypothesis was accepted. There was a significant difference between the participating LTI staff pre- and posttest scores of the four factors made up from responses to the attitude questionnaire following involvement with Quality/Performance Circles. The group pre and post means, standard deviations, and t-values for each of the four factors and the composite group means, standard deviations, and t-values are shown in Table 4.3.

The change in attitudes of participating LTI staff following involvement with Quality/Performance Circles was relatively high as indicated by the increase in composite means, which were 98.63 for the pretest and 120.69 for the posttest (based on a maximum of 160.00). The t-value for factor 1, "Acceptance of Staff in LTI Decision-Making/Problem-Solving Process," was 5.35; the t-value for factor 2, "Adequacy of Communications in LTI Decision-Making/Problem-Solving Process," was 4.03; the t-value for factor 3, "Adequacy of LTI Decision-Making/Problem-Solving Process," was 6.61; and the t-value for factor 4, "Capability/Training of Staff in LTI Decision-Making/-Problem-Solving Process," was 8.27. The composite t-value for the group was 6.61.

Table 4.3

Group Means, Standard Deviations, and t-Values for Responses Included Within the Four Factors of the Quality/Performance Circles Attitude Questionnaire

Factor	Mean Pre	Mean Post	Standard Deviation Pre	Standard Deviation Post	t-Value
1	38.56	38.31	5.39	4.05	5.35[a]
2	24.83	29.04	5.43	4.22	4.03[a]
3	27.04	33.06	5.49	3.52	6.61[a]
4	13.94	17.96	2.60	2.41	8.27[a]
Composite	98.63	120.69	18.50	16.60	6.61[a]

[a] Critical t-value = 1.96, therefore significant at the .05 level.

The standard deviations were calculated for each of the four factors and the composite. For each of the four factors and the composite, the standard deviation of the posttest was smaller than the standard deviation of the pretest. This indicates a greater tendency toward the mean response by the participants.

> Null hypothesis 2: There is no significant difference in the posttest scores related to the four factors making up the attitude questionnaire between the LTI management group and nonmanagement group following involvement with Quality/Performance Circles.

The procedures used for treating the data of hypothesis one required the utilization of a discriminate analysis on the pretest scores of the four factors between the management and nonmanagement groups. As there was no significant difference in the pretest scores of any of the four factors between the two groups (overall significance was 0.7918), a discriminate analysis was utilized on the posttest scores.

Three of the four factors were found to be significant. The overall significance of the four factors making up the attitude questionnaire was 0.0165. This indicates that there was a significant difference in the change in attitudes of the management staff as compared to the nonmanagement staff following involvement with Quality/Performance Circles. Null hypothesis one was rejected, and the alternative hypothesis was accepted. There was a significant difference in the posttest scores related to the four factors making up the attitude questionnaire between the LTI management group and nonmanagement group following involvement with Quality/Performance Circles. The management and nonmanagement pre and post means and standard deviations are shown in Table 4.4.

The change in attitudes of the 35 LTI management staff following involvement with Quality/Performance Circles was relatively high as indicated by the increase in composite means which were 25.11 for the pretest and 30.39 for the posttest. The 13 nonmanagement staff had composite pre and post means of 24.15 and 27.69.

Composite pre and post standard deviations for the management group were 8.86 and 8.41. The nonmanagement group had composite pre and post standard deviations of 7.80 and 8.07.

The overall significance of hypothesis two was 0.0165 which indicates significance below the .05 level. Three of the four factors that were significant were factor 2, "Adequacy of Communications in LTI Decision-Making/Problem-Solving Process" (0.0398); factor 3, "Adequacy of LTI Decision-Making/Problem-Solving Process" (0.0017); and factor 4, "Capability/Training of Staff in LTI Decision-Making/Problem-Solving Process" (0.0074). The F-ratios and levels of significance for each of

Table 4.4

Comparison of Means and Standard Deviations for Management and Nonmanagement Responses Included Within the Four Factors of the Quality/Performance Circles Attitude Questionnaire

	Participants							
	Management (N=35)				Nonmanagement (N=13)			
	Mean		Standard Deviation		Mean		Standard Deviation	
Factor	Pre	Post	Pre	Post	Pre	Post	Pre	Post
1	34.06	39.14	5.77	4.06	32.23	37.00	4.11	3.03
2	25.03	29.80	5.96	4.15	24.31	27.00	3.77	3.85
3	27.17	34.00	5.97	3.34	26.69	30.54	4.13	2.73
4	14.20	18.51	2.73	2.38	13.31	16.46	2.32	1.85
Composite	25.11	30.39	8.86	8.41	24.15	27.69	7.80	8.07

[a] A score of 40 was the maximum obtainable score for the composite mean.

the four factors reflecting comparison of the management and nonmanagement staff are shown in Table 4.5.

> Null hypothesis 3: There is no significant difference in the posttest scores of participants with respect to the four factors making up the attitude questionnaire between LTI personnel having different management styles following involvement with Quality/Performance Circles.

The procedures used for treating the data of hypothesis one required the utilization of a discriminate analysis on the pretest scores of the four factors between LTI personnel having different management styles. As there was no significant difference in the pretest scores of any of the four factors between the two groups (overall significance was 0.1185), a discriminate analysis was utilized on the posttest

Table 4.5

F-Ratios and Levels of Significance for Management and Nonmanagement Responses[a] Included Within the Four Factors of the Quality/Performance Circles Attitude Questionnaire

Factor	F-Ratios	Levels of Significance
1	0.2987	0.0906
2	0.4477	0.0398[b]
3	0.1113	0.0017[b]
4	0.7853	0.0074[b]
Overall		0.0165[b]

[a] Management (N=35); nonmanagement (N=13).
[b] Significant at the .05 level.

scores. None of the four factors were found to be significant, and the overall significance of the four factors was 0.7445. This indicates that there was no significant difference in the change in attitudes between LTI personnel having management style X and personnel having management style Y following involvement with Quality/Performance Circles. Null hypothesis three was accepted and the alternative hypothesis rejected. There is no significant difference in the posttest scores of participants with respect to the four factors making up the attitude questionnaire between LTI personnel having different management styles following involvement with Quality/Performance Circles. The pre- and posttest means and standard deviations for LTI personnel having management style X and personnel having management style Y are shown in Table 4.6.

Table 4.6

Comparison of Means and Standard Deviations for Responses of LTI Personnel Having Different Management Styles and Their Responses to Items Included Within the Four Factors of the Quality/Performance Circles Attitude Questionnaire

	Participants							
	Theory X (N=14)				Theory Y (N=34)			
	Mean		Standard Deviation		Mean		Standard Deviation	
Factor	Pre	Post	Pre	Post	Pre	Post	Pre	Post
1	33.43	37.43	4.57	3.67	33.62	39.03	5.75	3.94
2	26.00	27.86	5.06	4.29	24.35	29.53	5.58	4.16
3	28.93	32.29	5.60	4.57	26.27	33.38	5.34	3.02
4	13.29	17.29	2.34	1.49	14.24	18.24	2.73	2.68
Composite	25.41	28.38	8.76	8.14	24.62	30.04	8.53	8.39

[a]A score of 40 was the maximum obtainable score for the composite mean.

The changes in attitudes of the 14 Theory X staff and the 34 Theory Y staff are similar for both groups. Composite pre- and post means were 25.41 and 28.38 for the LTI staff with Theory X management styles and 24.62 and 30.04 for the LTI staff with Theory Y management styles. Composite pre- and post standard deviations for the Theory X staff were 8.76 and 8.14. The Theory Y staff had composite pre- and post standard deviations of 8.53 and 8.39.

None of the changes in attitudes of the four factors were significant. The overall significance of hypothesis three was 0.7445 which indicates no significance. The F-ratios and levels of significance for each of the four factors reflecting comparison between LTI staff members with Theory X and Theory Y management styles are shown in Table 4.7.

Table 4.7

F-Ratios and Levels of Significance for Responses of LTI Personnel[a] Having Different Management Styles to Items Included Within the Four Factors of the Quality/Performance Circles Attitude Questionnaire

Factor	F-Ratios	Levels of Significance
1	0.1698	0.1990
2	0.1575	0.2159
3	0.9610	0.3321
4	0.1552	0.2191
Overall		0.7445

[a] Management style X (N=14); management style Y (N=34).
[b] Significant at the .05 level.

Evaluation of the implementation process of the Quality/Performance Circles process model. To evaluate the implementation of the Quality/Performance Circles model, each participant (see Table 4.1, page 70) responded to the training, acceptance, support, and impact questionnaire (see Appendix F). The questionnaire contained 27 items with an opportunity for comments and suggestions.

Training aspects of Quality/Performance Circles. The responses of the participating LTI management and nonmanagement staff regarding the training aspects of the Quality/Performance Circles process are included in Table 4.8. The means and standard deviations were calculated for the management responses, the nonmanagement responses, and the composite of the responses. The training aspects were then ranked according to the composite mean from high to low based on a scale of 1 to 5 with 5 being greatest.

Table 4.8

Ranking of Means and Standard Deviations of Responses Toward Training Aspects of Quality/Performance Circles by Management and Nonmanagement Personnel

		Participants					
		Management (N=35)		Nonmanagement (N=13)		Composite (N=48)	
Rank[a]	Training Aspects	Mean[b]	S.D.	Mean[b]	S.D.	Mean[b]	S.D.
1	Level of Content	2.97	.51	2.92	.64	2.96	.54
2	Quality of Materials (Manuals, Tapes, Working Papers, Etc.)	2.86	.55	3.00	.58	2.96	.54
4	Length of Training Session (Two 8-Hour Days)	2.91	.95	2.92	1.04	2.92	.96
3	Content of Materials (Manuals, Tapes, Working Papers, Etc.)	2.54	.74	3.00	.58	2.69	.75

[a] Ranked according to composite mean from high to low
[b] Based on scale of 1 to 5 with 5 being greatest

The training aspects receiving the highest ranking according to the greatest composite mean were the "level of content" of the two-day Quality/Performance Circles session and the "quality of materials" utilized in the training session--both having a composite mean of 2.96.

Composite standard deviations for the two training aspects with the greatest composite means were both .54.

The 35 management and 13 nonmanagement staff participating in the Quality/Performance Circles process were asked to rate Quality/-Performance Circles skills acquired from the training session. These skills included: (1) establishing a quarterly theme, (2) developing specific measurable skills, (3) brainstorming, (4) group decision making, (5) identifying roadblocks, (6) planning and implementation, and (7) evaluating results. Table 4.9 summarizes the participants' responses.

Participants rated "brainstorming" as the skill in which they were most adequately prepared following the two-day training session. The composite mean was 4.10 based on a scale of 1 to 5 with 5 being greatest. The remaining Quality/Performance Circles skills according to composite mean ranged from 3.71 to 3.25. Composite standard deviations ranged from .69 to 1.00.

Table 4.10 summarizes the participants' rating of Quality/Performance Circles training conducted by the consulting firm of Measurable Performance Systems, Inc., of Milwaukee, Wisconsin. The firm conducted a two-day training session (16 hours) with each Quality/Performance Circle. In addition, the consulting firm made periodic visits with each circle during the 1982-83 school year to provide additional training and clarify procedures to be followed within the Quality/-Performance Circles process.

Of the 48 participants who volunteered to continue the Quality/-Performance Circles process after the training sessions, 2.08 percent rated the training excellent, 41.67 percent good, and 50 percent rated

Table 4.9

Ranking of Participants' Rating of Quality/Performance Circles Skills Acquired From Training Sessions

		Participants					
		Management (N=35)		Nonmanagement (N=13)		Composite (N=48)	
Rank[a]	Quality/Performance Circles Skills	Mean[b]	S.D.	Mean[b]	S.D.	Mean[b]	S.D.
1	Brainstorming	4.41	.73	3.85	.56	4.10	.69
2	Planning and Implementation	3.80	.87	3.46	1.05	3.71	.92
3	Group Decision Making	3.74	.78	3.54	.77	3.69	.80
4	Establishing a Quarterly Theme	3.54	1.03	4.00	.58	3.66	.95
5	Developing Specific Measurable Goals	3.49	.95	3.92	.86	3.60	.94
6	Evaluating Results	3.31	.87	3.69	.85	3.42	.87
7	Identifying Roadblocks	3.26	1.07	3.23	.83	3.25	1.00

[a] Ranked according to composite mean from high to low
[b] Based on scale of 1 to 5 with 5 being greatest

the training average. Three management staff, or 6.25 percent of the total participants, rated the training session below average.

Acceptance of Quality/Performance Circles process. The facilitator of LTI's Quality/Performance Circles process was assigned the following tasks:

1. Administrative functions including scheduling, location, distribution, and ordering of materials and supplies.

Table 4.10

Participants' Rating of Quality/Performance Circles Training Session Conducted by Consultant[a]

	Participants					
	Management		Nonmanagement		Composite	
Rating	N=35	%	N=13	%	N=48	%
Excellent	1	(2.86)	0	(0.00)	1	(2.08)
Good	11	(31.43)	9	(69.23)	20	(41.67)
Average	20	(57.14)	4	(30.77)	24	(50.00)
Poor	2	(5.71)	0	(0.00)	2	(4.17)
Very Poor	1	(2.86)	0	(0.00)	1	(2.08)
Total	35	(100.00)	13	(100.00)	48	(100.00)

[a] Consulting firm was Measurable Performance Systems, Inc., Milwaukee, Wisconsin.

2. Communication functions including recruiting circle volunteers, attending circle meetings, liaison with management, and scheduling leader training.

Table 4.11 summarizes the participants' responses regarding the role performed by the LTI Quality/Performance Circles facilitator. Rating was directed to the aspects of communication, assistance, and training.

Two of the three listed factors, "communication concerning Quality/Performance Circles prior to participation" and "assistance to individual circle during involvement," had composite mean values of 4.04. The composite mean of the other factor, "additional training

Table 4.11

Ranking of Participants' Rating of Role Performed by Quality/Performance Circles Facilitator

		Participants					
		Management (N=35)		Nonmanagement (N=13)		Composite (N=48)	
Rank[a]	Item	Mean[b]	S.D.	Mean[b]	S.D.	Mean[b]	S.D.
1	Communication Concerning Q/PC[c] Prior to Participation	4.03	.71	4.08	.64	4.04	.68
2	Assistance to Circle During Involvement	4.00	.80	4.15	.56	4.04	.74
3	Additional Training Provided During Involvement	3.00	.77	3.42	.79	3.33	.77

[a] Ranked according to composite mean from high to low
[b] Based on scale of 1 to 5 with 5 being greatest
[c] Q/PC is Quality/Performance Circles

provided during involvement," was 3.33. Composite standard deviations of the three factors ranged from .68 to .77.

The 35 participating management and 13 nonmanagement staff of LTI rated their acceptance of the Quality/Performance Circles process using four items: (1) employee participation in problem solving and decision making, (2) circle member values towards the Quality/Performance Circles process, (3) noncircle participants' opinions and values towards the Quality/Performance Circles process, and (4) immediate supervisor opinions and values toward the Quality/Performance Circles process. Table 4.12 summarizes the responses of the participants' acceptance of the Quality/Performance Circles process.

Table 4.12

Ranking of Participants' Acceptance of Quality/ Performance Circles Process

		Participants					
		Management (N=35)		Nonmanagement (N=13)		Composite (N=48)	
Rank[a]	Items	Mean[b]	S.D.	Mean[b]	S.D.	Mean[b]	S.D.
	Quality/Performance Circles Process:						
1	Encourages Employee Participation in Problem Solving/ Decision Making	4.43	.56	4.31	.95	4.40	.68
2	Is Valued by My Immediate Supervisor	4.44	.56	3.84	.99	4.28	.74
3	Is Valued by Most of the Other Members of the Circle	3.69	.90	4.30	.75	3.85	.90
4	Is Valued by Most of the Noncircle Participants Within My Department/Division	2.97	1.13	2.23	.93	2.74	1.15

[a] Ranked according to composite mean from high to low
[b] Based on scale of 1 to 5 with 5 being greatest

Two of the four items listed, "encourages employee participation in problem solving/decision making" and "is valued by my immediate supervisor," had composite mean values of 4.40 and 4.28, respectively. The item which was ranked lowest, "is valued by most of the noncircle participants within my department/division," had a composite mean of

2.74. Composite standard deviations for the four items ranged from .68 to 1.15.

Table 4.13 summarizes the participants' feelings toward accomplishments, activities, goals, and values of Quality/Performance Circles participation. The responses were ranked according to the composite mean based on a scale of 1 to 5 with 5 being greatest.

"I (participant) feel my circle's goals were worthwhile" ranked highest with a composite mean of 4.44. The item "I (participant) feel my Quality/Performance Circle's activities were less rewarding than activities that they took time away from" had the lowest composite mean value (3.90). Composite standard deviations ranged from .77 to 1.00.

Support of Quality/Performance Circles process. The 35 management and 13 nonmanagement personnel surveyed were asked to determine the participants' feelings toward management support of the Quality/-Performance Circles process. Table 4.14 summarizes the three support items.

Composite mean values were high. They ranged from 4.46 to 4.16 for the three items. Composite standard deviations were extremely close and ranged from .65 to .68.

Quality/Performance Circles impact. In order to determine the impact that the Quality/Performance Circles process had on LTI, participants were asked their opinions regarding the improvement along seven lines: (1) employee attitudes, (2) internal communications, (3) quality of work life, (4) working conditions, (5) instruction, (6) support services, and (7) reduction of LTI operating costs. Table 4.15 reports results about the above-mentioned impacts.

Table 4.13

Ranking of Participants' Feelings Toward Accomplishment, Activities, Goals, and Value of Quality/Performance Circles Participation

		Participants					
		Management (N=35)		Nonmanagement (N=13)		Composite (N=48)	
Rank[a]	Item	Mean[b]	S.D.	Mean[b]	S.D.	Mean[b]	S.D.
	I (Participant) . . .						
1	Feel My Circle's Goals Were Worthwhile	4.40	.77	4.54	.78	4.44	.77
2	Value my Participation in the Quality/Performance Circles Process	4.23	.73	4.08	1.04	4.19	.82
3	Feel Good About My Circle's Accomplishments	4.20	.93	4.15	1.21	4.19	1.00
4	Feel my Quality/Performance Circle's Activities Were More Rewarding Than Activities That They Took Time Away From	3.97	.89	3.69	1.18	3.90	.97

[a] Ranked according to composite mean from high to low
[b] Based on scale of 1 to 5 with 5 being greatest

The Quality/Performance Circles impact receiving the greatest number of responses (42, or 87.50 percent of total participants) was "improvement of internal communications." "Improvement of employee attitudes (morale)" received 26 responses, or 54.17 percent of total participants.

Table 4.14

Ranking of Participants' Feelings Toward Management's Support of Quality/Performance Circles Process

		Participants					
		Management (N=35)		Nonmanagement (N=13)		Composite (N=48)	
Rank[a]	Item	Mean[b]	S.D.	Mean[b]	S.D.	Mean[b]	S.D.
	I (Participant) Feel That . . .						
1	Management Encourages Circle Participation	4.62	.55	4.08	.76	4.47	.65
2	Management Has Shown an Interest in My Circle's Activities	4.49	.70	4.38	.65	4.46	.68
3	Management's Actions Upon Circles' Recommendations/Requests Have Been Appropriate	4.13	.72	4.25	.45	4.16	.65

[a] Ranked according to composite mean from high to low
[b] Based on scale of 1 to 5 with 5 being greatest

Quality/Performance Circles participants were asked to indicate whether they would consider participating within a Quality/Performance Circle or a Project Circle during the 1983-84 school year. Table 4.16 summarizes the overwhelming positive opinions of respondents who participated within the LTI Quality/Performance Circles process during 1982-83.

Of the 35 management Quality/Performance Circles participants in 1982-83, 30 (85.71 percent) indicated they would participate in a

Table 4.15

Ranking of Quality/Performance Circles Impacts on Lakeshore Technical Institute

		Participants					
Rank[a]	Areas Of Improvement	Management N=35	%[b]	Nonmanagement N=13	%[b]	Composite N=48	%[b]
1	Internal Communications	33	(94.29)	9	(69.23)	42	(87.50)
2	Employee Attitudes (Morale)	17	(48.57)	9	(69.23)	26	(54.17)
3	Support Services	17	(48.57)	8	(61.54)	25	(52.08)
4	Quality of Work Life	12	(34.29)	7	(53.85)	19	(39.58)
5	Instruction	12	(34.29)	4	(30.77)	16	(33.33)
6	Working Conditions	10	(28.57)	2	(15.39)	12	(25.00)
7	Reduction of LTI Operating Costs	4	(11.43)	0	(0.00)	4	(8.33)

[a] Ranked according to total percent

[b] Total of percents in each column is greater than 100 because each respondent could select more than one impact

Quality/Performance Circle during the 1983-84 school year. Thirty-three (94.29 percent) indicated their preference to participate in a Quality/Performance Project Circle during the 1983-84 school year. Eleven nonmanagement staff (84.62 percent) indicated they would participate in a 1983-84 Quality/Performance Circle, and 13 (100.00 percent) indicated they would participate in a Quality/Performance Project Circle.

Table 4.16

Positive Opinions of LTI Staff Who Wish to Participate Within a Quality/Performance Circle During 1983-84

	Participants					
	Management (N=35)		Nonmanagement (N=13)		Total (N=48)	
During 1983-84 Would You Consider Participating:	N Positive	(%)[a]	N Positive	(%)[a]	N Positive	(%)[a]
During 1983-84 Would You Consider Participating:						
Within a Quality/ Performance Circle	30	(85.71)	11	(84.62)	41	(85.42)
Within a Quality/ Performance Project[b] Circle	33	(94.29)	13	(100.00)	46	(95.83)

[a] Percent (%) of subgroup total

[b] Project Circle is a group of employees (not necessarily from the same department/division) who volunteer to participate on a work project

Of the 48 Quality/Performance Circles participants in 1982-83, 41 (85.42 percent) indicated they would participate in a Quality/Performance Circle during the 1983-84 school year. Forty-six (95.83 percent) indicated their preference to participate in a Quality/Performance Project Circle during the 1983-84 school year.

Chapter V

SUMMARY, INTERPRETATION, CONCLUSIONS, AND RECOMMENDATIONS

In the last couple of decades, attempts have been made to make the workplace a more pleasant place to work. This humanization of work had limited results and was largely an attempt to pacify people. The Quality Circles process is much more involved and represents a complete redefinition of the management-employee relationship. Chapter V has been subdivided into four main categories: (1) Summary and Review, (2) Interpretation of Results, (3) Conclusions, and (4) Recommendations.

Summary and Review

The Quality Circles concept and process has been credited with being a key component in increasing employee productivity. This participative management technique has been implemented in banks, hospitals, industrial organizations, and service organizations. Some educational institutions have implemented this process in an attempt to address productivity and quality issues facing American schools in the 1980s.

A review of public educational institutions' operational budgets reveals that an average of 65 percent or more of the total annual operational expenditures are attributed to the personal services classification of wages and fringe benefits. To address productivity and quality issues facing educational institutions, educators will have to focus their energies toward methods and techniques that will enable better utilization of abilities, experiences, and talents of their personnel (employees). Implementation of participative management techniques, such as Quality Circles, is enabling educational managers to utilize the true expertise of their employees through increased involvement in the institutional decision-making and problem-solving processes.

The Lakeshore Technical Institute faculty, management, specialists, and support services personnel expressed a desire for greater involvement in the institution's decision-making and problem-solving processes. This interest, and a desire on the part of the Lakeshore Technical Institute Board of Education and administrative staff to experiment with the Quality Circles process, led to the implementation of a Quality/Performance Circles process model within the Lakeshore Technical Institute management and nonmanagement staff during the 1982-83 school year. The administration and board selected the technique of Quality/Performance Circles as part of a long-range effort to increase employee participation in the decision-making and problem-solving processes of the institution.

During the 1982 fall semester, a group of 48 Lakeshore Technical Institute management and nonmanagement personnel volunteered to participate in the Quality/Performance Circle process. Members of this group completed a pretest decision-making and problem-solving questionnaire and a management-style inventory at the beginning of their participation. The group divided into seven individual Quality/Performance Circles--each identifiable with a unique name, circle theme, and goals/projects. Training sessions and circle activities were conducted throughout the nine-month period. At the conclusion of this period, the participants completed a posttest decision-making and problem-solving attitude questionnaire and a posttest implementation questionnaire addressing the training, acceptance, support, and impact of the Quality/Performance Circles process.

Various comparisons of the data gathered from these questionnaires were made and analyses used to answer the research questions listed in Chapter I, page 10. The results of the data were then used to develop conclusions and recommendations related to the effectiveness and the implementation process of a Quality/Performance Circles system model to assist Lakeshore Technical Institute in its decision-making and problem-solving processes.

Interpretation of Results

> Research question 1: Is there a change in attitudes of Lakeshore Technical Institute personnel before and after involvement with Quality/Performance Circles; and if so, is it of a significant level?

An analysis of the data indicated that there was a significant increase in the means of the responses by participants to items contained in the attitude questionnaire after involvement with Quality/-Performance Circles. The increase in the means of the responses indicates that participants had a better attitude toward the institutional decision-making and problem-solving processes after participation in Quality/Performance Circles than before the participation. While some positive change in attitudes could be attributed to the Hawthorne effect, a number of other factors could be responsible for the positive change in attitudes. These factors are:

1. The participating staff expressed a desire to become involved in the decision-making and problem-solving processes within Lakeshore Technical Institute. Quality/Performance Circles allowed for this participation; and the group interest continued throughout the school year, despite the financial issues of the economy and labor relation issues that were prevalent during LTI's 1982-83 school year.

2. The Quality/Performance Circles process was endorsed by top management. The six senior-level administrators also formed their own circle which accomplished various goals and projects (see Appendix H).

3. The Quality/Performance Circles process provided participating management and nonmanagement staff with additional training in participative management techniques. The training was a major component of the Lakeshore Technical Institute professional improvement efforts during the 1982-83 school year.

4. During the Quality/Performance Circles process, participants expressed a feeling of value toward various goals and projects completed by the Circles. The results of the quarterly goals and projects were disseminated to interested staff.

> Research question 2: Is there a change in attitudes between management and nonmanagement classifications before and after involvement with Quality/Performance Circles; and if so, is it of a significant level?

Both participating management and nonmanagement staff attitudes toward the institutional decision-making and problem-solving processes were increased as indicated by means of the responses to the attitude questionnaire. However, there was a significant difference in the increase of the means of the responses of the management group as compared to the means of the responses of the nonmanagement group after involvement with Quality/Performance Circles. This indicates that, while the attitudes of both groups increased, management staff attitudes increased significantly more than nonmanagement staff attitudes. A number of factors could be responsible for this difference in increase in attitude levels. These factors are:

1. LTI management staff had previous in-service training involving participative management techniques. This background, with the additional training provided within the Quality/Performance Circles process, enabled the management staff to be more comfortable with the process, resulting in a better understanding of the participative decision-making and problem-solving processes than the nonmanagement staff.

2. The faculty participants of the nonmanagement staff was probably influenced negatively because of pressure resulting from labor contract issues. The Lakeshore Education Association (faculty union) executive committee went on record to support the Quality/Performance Circles process only after the 1982-83 negotiated agreement had been settled. The agreement was settled in late December 1982, approximately five months after the Quality/Performance Circles process had been instituted.

3. The support services staff participants of the nonmanagement staff were selected for participation based on job classification. These staff members had little or no previous training in participative management techniques. The increases in feelings regarding their effectiveness and role in the decision-making and problem-solving processes were less because of the previous nonawareness of the process.

Research question 3: Is there a change in attitudes toward the use of Quality/Performance Circles techniques in decision making/problem solving between LTI personnel having different management styles; and if so, is it of a significant level?

Increases in attitudes, as expressed by the means of the responses, did occur for both the staff with Theory X and the staff with Theory Y management styles. However, an analysis of the data indicated that there was no significant difference in the change in attitudes between LTI staff with Theory X and LTI staff with Theory Y management styles after involvement with Quality/Performance Circles.

The Theory X and Theory Y analysis of managerial approaches to subordinate motivation and organizational behavior proposed by Douglas McGregor stems from managers' personal "theories" regarding the nature of man. Jacoby and Terberg stated that:

> Theory X philosophy suggests that the workers' goals and those of the organization are in conflict and that workers are primarily motivated by extrinsic rewards and the fear of punishment. In contrast, a Theory Y philosophy accepts the position that employees are motivated to achieve intrinsic as well as extrinsic rewards. Intrinsic rewards stem from the activity of the job itself. They allow for feelings of achievement, autonomy, self-respect, self-fulfillment, and are believed to be more powerful motivators than extrinsic rewards. Further, the goals of the employee and organizational goals need not conflict (Jacoby and Terberg:1975:2).

A factor that could be responsible for the resulting no signficance could be the previous experience level of the participants. An analysis of the Managerial Philosophy Scale resulted in 14 participants being classified as Theory X and 34 participants being classified as Theory Y. Of the 14 Theory X management style participants, ten were management staff and four were nonmanagement staff. The Theory Y management style participants consisted of 25 management staff and nine nonmanagement staff. The fact that a large portion of the Theory X group already had experience and training in the participative decision-making and problem-solving processes (10 of 14 were management staff) may have been responsible for the no significant difference between the Theory X and Theory Y groups.

> Research question 4: Was the implementation of the Quality/Performance Circles (QC/PC) process model adequate for LTI personnel to participate in the QC/PC process?

An analysis of the data indicated that participating Lakeshore Technical Institute personnel felt the implementation of the Quality/-Performance Circles process model was adequate. Composite mean values of the 27 items in the training, acceptance, support, and impact questionnaire (see Appendix F) ranged from a low of 2.69 to a high of 4.47 based on a scale of 1 to 5 with 5 being greatest.

The greater composite mean values were reported in the acceptance section of the implementation questionnaire. Respondents ranked the factor of LTI's management support highest (4.47). The aspect of management support can be attributed to Lakeshore Technical Institute's philosophy that senior-level management staff not only support the Quality/Performance Circles process but participate in the training sessions. The fact that circles were formed from senior management through middle and first-line supervision indicated management's commitment to the process. Of the 39 Lakeshore Technical Institute management staff who participated in the training sessions, 35 continued in the Quality/Performance Circles process during the 1982-83 school year.

Of the 1982-83 school year participants, 48 (85.42 percent) indicated that they would consider participating within a Quality/-Performance Circle during the 1983-84 school year. Forty-six of the 48 1982-83 participants (95.83) percent indicated they would volunteer to participate within a Quality/Performance Circle during the 1983-84 school year. The 1982-83 participants reported that the Quality/Performance Circles process resulted in improvements in internal communications, employee attitudes, quality of working life, and improvement of instructional and support services.

Conclusions

The major conclusions reached as a result of this study were as follows:

1. Lakeshore Technical Institute management and nonmanagement staff who participated in the Quality/Performance Circles process had a more positive attitude toward the institutional decision-making and problem-solving processes as a result of involvement in the participative management technique.

2. Management attitudes toward the decision-making and problem-solving processes were increased more than nonmanagement staff as a result of involvement in the Quality/Performance Circles process.

3. Staff having Theory X management styles tended to have increased positive attitudes towards the institutional decision-making and problem-solving processes similar to those staff with Theory Y management styles as a result of involvement with Quality/Performance Circles.

4. Staff involvement in the Quality/Performance Circles process is believed to result in improvement of communication, employee attitudes, instruction and support services, and quality of working life.

5. Quality/Performance Circle participants need additional training beyond the initial training sessions. A follow-up training

session for all circle members three to six months after the initial training is essential.

6. The Quality/Performance Circles process does take time away from the participating staff's daily job duties and responsibilities. Organizations involved in the process need to be committed to the projected long-range results of the process.

Recommendations

Recommendations for improvement of practice. The following recommendations have been formulated from the results of this study:

1. The results of this study should be used to encourage continued research of the Quality/Performance Circles process within educational institutions in areas such as longitudinal involvement and cost-reduction goals/projects. This research should be the responsibility of the LTI administration.

2. The results of this study should be used to incorporate participative management techniques in the institutional long-range plan to create greater opportunities for employee decision making and problem solving. This long-range plan should be the responsibility of the LTI instructional research administrator.

3. The results of this study should be used to encourage cooperative Quality/Performance Circles with surrounding educators of secondary, two-and four-year postsecondary institutions to improve articulation and communication among/between institutions. This cooperative effort should be the responsibility of the LTI administration.

4. The results of this study should be used to encourage non-participating Lakeshore Technical Institute staff to become involved in Quality/Performance Circles training and participate within the process

during the 1983-84 school year. This participation should be the responsibility of the LTI Quality/Performance Circles facilitator.

5. The results of this study should be used to coordinate an in-service training program for nonparticipating faculty to make them aware of basic skills and concepts utilized within the Quality/Performance Circles process and to encourage the incorporation of circle techniques into existing curriculum of educational programs to provide circle skills to students. This development of in-service training should be the responsibility of the LTI Instructional Services Committee.

6. The results of this study be used to look beyond the Quality/Performance Circles process to other organizational innovations which will improve employee productivity and the quality of working life for employees in the organization. This development should be the responsibility of the LTI Board of Education and Administrative Council.

Recommendations for diffusion and implementation. The study's results and recommendations will be presented to the following agencies and groups:

1. The Lakeshore Technical Institute Board of Education. The members should be informed of the results of the Quality/Performance Circles effectiveness and implementation evaluation data to obtain consideration for continued funding of the program and to gain the board's support of this type of employee participation in the institutional decision-making and problem-solving processes.

2. The Lakeshore Technical Institute faculty, management, and support services staffs. These staffs also should be informed of the

type of participative management technique available to them to assist in greater involvement in the institutional decision-making and problem-solving processes.

3. The Wisconsin Board of Vocational, Technical and Adult Education (VTAE) Personnel Subcommittee. This committee represents the personnel administrators/managers of the 16 Wisconsin VTAE districts and has an interest in participative management techniques such as the Quality/Performance Circles process for potential utilization within their respective institutions.

4. The Wisconsin Board of Vocational, Technical and Adult Education Research Subcommittee. This committee represents the research administrators/specialists of the 16 Wisconsin VTAE districts and has an interest in research design/methodology and in supporting continued research regarding institutional concerns/problems.

5. The Lakeshore Quality Circle Facilitators. This group represents the Quality Circle facilitators of business, government, and industry within the Lakeshore Technical Institute District and meets monthly to share data, solve problems, and support the Quality Circles process.

6. The readers of professional journals/periodicals and local newspapers. The results and recommendations of this study will be summarized for consideration for publication in the following journals, periodicals, and newspapers:

a. School Business Affairs--the monthly professional journal of the Association of School Business Officials of the United States and Canada. This will provide an opportunity for sharing the results of this study with other school management officials.

b. Voc. Ed.--the monthly professional journal of the American Vocational Association. This will provide an opportunity to share the results of this study with vocational management and nonmanagement professionals.

c. Community and Junior College Journal--the professional journal of the American Association of Community and Junior Colleges. This will provide an opportunity to share the results of this study with management and nonmanagement personnel of community colleges.

d. Manitowoc Herald-Times-Reporter and The Sheboygan Press--the official Lakeshore Technical Institute newspapers. This will provide an opportunity for Lakeshore Technical Institute to publicize the Quality/Performance Circles process and to publicize the results of the process to the citizens/taxpayers of the Lakeshore VTAE District.

Quality/Performance Circles can be a vehicle for enhancing the quality of work life by increasing the opportunities for employees to participate in the decision-making and problem-solving processes. If educational administrators and managers are to be successful in encouraging increased participation, it will require a rethinking of top- and middle-level management. It is these attitudes that should change to bring about increased employee participation in decision making and problem solving.

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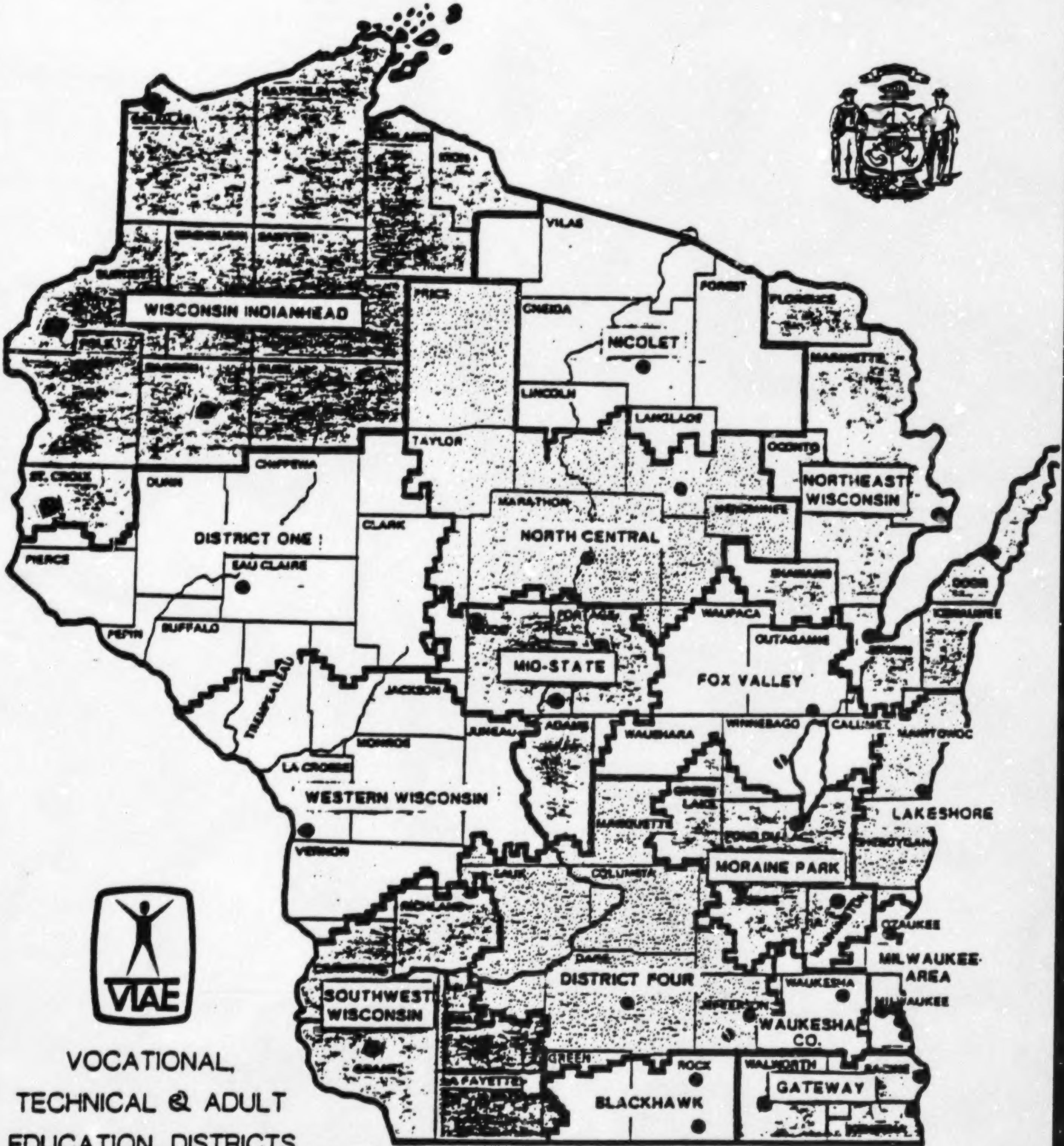
APPENDIX A

State of Wisconsin

BOARD OF VOCATIONAL, TECHNICAL & ADULT EDUCATION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FOREST
FLORENCE
NICOLET
MARINETTE
LINCOLN
LANGLADE
TAYLOR
OCONTO
NORTHEAST WISCONSIN
ST. CROIX
DUNN
CHIPPEWA
DISTRICT ONE
CLARK
MARATHON
NORTH CENTRAL
MENOMINEE
PIERCE
EAU CLAIRE
SHAWANO
DOOR
KEWAUNEE
PORTAGE
WAUPACA
WOOD
PEPIN
BUFFALO
OUTAGAMIE
BROWN
MID-STATE
TREMPEALEAU
FOX VALLEY
JACKSON
JUNEAU
ADAMS
WAUSHARA
WINNEBAGO
CALUMET
MANITOWOC
MONROE
LA CROSSE
GREEN LAKE
WESTERN WISCONSIN
MARQUETTE
LAKESHORE
FOND DU LAC
VERNON
SHEBOYGAN
MORAINE PARK
SAUK
COLUMBIA
RICHLAND
DODGE
WASHINGTON
OZAUKEE
CRAWFORD
MILWAUKEE AREA
DANE
DISTRICT FOUR
WAUKESHA
SOUTHWEST WISCONSIN
JEFFERSON
MILWAUKEE
WAUKESHA CO.
IOWA
GRANT
GREEN
ROCK
WALWORTH
RACINE
LA FAYETTE
GATEWAY
BLACKHAWK
KENOSHA

VOCATIONAL, TECHNICAL & ADULT EDUCATION DISTRICTS AND FULL-TIME CAMPUSES

● Full-Time Designated and Approved Programs
◐ Other Full-Time and Special Offerings

APPENDIX B

COUNCIL OF ADMINISTRATORS, SUPERVISORS, COORDINATORS, SPECIALISTS, AND SUPPORT STAFF MANAGERS MEETING MINUTES

Thursday, April 21, 1982 - 7:30 a.m.
Lakeshore Technical Institute, Conference Room C

Present: Ed Falck, Dennis Ladwig, Warren Hillmer, Jim Ferries, Jim Powers, George Zimmerman, Rachel Jackson, Steve Power, Richard Gerstner, Tom Hilke, Charles Ma, Niles Klaves, Bev Glaeser, Karen Holstein, Dean Voskuil, Louis Jirikowic, Fred Crook, Robert Naber, Fred Nierode, Pat Lacey, Doris Braeger, Rick Risch, Joan Skolas, Ron Krueger, Bev Baranczyk, Dick Romaine, Toni Pontar, and Glen Morgan

Absent: Norb Schell, Dennis Thiel, Jim Malmberg, Steve Smith, Kay Fett, Judy Powers, and Don Pritchard

Performance Circles

Mr. Larry Nelson, president of Measurable Performance Systems, continued his presentation on the management system entitled "Performance/-Quality Circles." He indicated that for service organizations, performance circles can provide a linkage between levels of management and that the system of quality circles could be implemented for the support staff levels.

Mr. Nelson then discussed the six steps in performance circles:

1. Circle Theme--a nice, pleasant, political statement. Something that will give the organization the focus of the issue regarding problem solving.

2. Quarterly Theme--a quarterly theme generally is changed within 90 days.

3. Establish a Goal--specific and measurable outcomes (percents, time frames, etc.)

4. Roadblocks--the problem and the cause of the problem. Generally, there are four key words used. They are:

    A. Modify.

    B. Replace.

    C. Eliminate.

    D. Cope with it.

5. Plan--development of a plan to dissolve or solve the problem.

6. Evaluating.

Instructions were given to the assigned work groups, and each of the six groups spent the next 45 minutes establishing the problem and the cause of the problem (roadblocks) by using the concepts and procedures identified by Mr. Larry Nelson. At the end of the 45-minute work session, the various groups reported on their individual problems and causes.

Mr. Ladwig indicated that one of the issues facing management for 1982-83 is consideration of continuance of the performance circle system on a voluntary basis. A show of hands indicated that of the council group, approximately 80 percent were interested in continuing the performance circle concept in 1982-83. Mr. Ladwig indicated that discussion will be held with the board of education and administrative staff to attempt to develop a plan of performance circles for 1982-83 which would involve training, implementation, and evaluation.

Other Information

An evaluation form for the 1981-82 SAC meetings will be prepared and distributed to council members. It was indicated that in the evaluation and survey form, opinions will be asked on various changes in formats for meetings planned in 1982-83.

The next scheduled meeting will be an informational meeting to be held on Friday, May 28, 1982, at 1:30 p.m.

There being no further business, the meeting was closed at 10:25 a.m.

DL:daj

APPENDIX C

PERSONNEL COMMITTEE

Lakeshore Technical Institute
Cleveland, Wisconsin
Wednesday, June 7, 1982
3:30 p.m.

BOARD MEMBERS PRESENT: Brennan, Feldmann, Goetsch, Voechting, Ziemer

LTI STAFF: Ladwig, Nierode

The meeting of the Personnel Committee was called to order at 3:30 p.m. It was noted that this meeting had been publicized in accordance with the requirements of the Open Meeting law.

Management and Staff Training 1982-83

Mr. Ladwig presented information on the Quality/Performance Circles System which has been successfully employed in Japanese industry within recent years and had been implemented within business, industry, and government in the United States. It was discussed that the Lakeshore Technical Institute experimented with the Quality/Performance Circles System during March and April 1982 within the Council of Administrators, Supervisors, Coordinators, Specialists, and Support Staff Managers meetings.

It was proposed that effective for the 1982-83 school year, LTI participate in the Quality/Performance Circles System involving 50 to 60 people. The groups of people would be broken down into administrators, supervisors, coordinators, support staff managers, education--specialists, support staff, and instructors.

Mr. Ladwig discussed the various alternatives in implementing such a system. These alternatives were: (1) selecting a facilitator and having the facilitator attend a Performance Circle Seminar or (2) employ the services of an outside consultant to train the staff. It was proposed that LTI employ the firm Measurable Performance Systems to assist in the implementation of the Quality/Performance Circles System. The projected consultant fees will range between $4,000 and $5,000, depending upon the amount of consultant services.

After considerable discussion, it was moved by Ziemer and seconded by Goetsch to recommend to the full board to approve the Quality/Performance Circles Training System for Lakeshore Technical Institute staff members during the 1982-83 school year. Upon vote, the motion was carried.

Wages and Salaries, 1982-83; Administrative, Management, Support Staff

Presented to the committee were proposed adjustments in wages for the LTI staff members. Discussion centered around the amount of percentage increase, reclassification, and other wage adjustments.

APPENDIX D

DECISION-MAKING/PROBLEM-SOLVING ATTITUDES QUESTIONNAIRE

Lakeshore Technical Institute
1982-83

This questionnaire is designed to enable each management and staff member to describe the employees' decision-making/problem-solving involvement.

In completing this questionnaire, it is important that you answer each question as thoughtfully and frankly as possible. There are no right or wrong answers.

To assist in gathering data for this project, please include your name or the last four digits of your social security number at the top of the questionnaire.

Please indicate your answer to each statement by circling the number that most nearly reflects your feeling toward the statement.

When you respond to this questionnaire, please keep in mind that you are responding either as a management staff member or as a nonmanagement staff member. MANAGEMENT includes administrators, coordinators, supervisors, which will be referred to as STAFF, includes faculty and and support services staff members.

I FEEL THAT WITHIN THE PRESENT DECISION-MAKING/PROBLEM-SOLVING PROCESS . . .

	Great Disagreement				Great Agreement
1. management has confidence in staff.	1	2	3	4	5
2. staff has confidence in management.	1	2	3	4	5
3. management behavior allows staff to feel free to discuss issues in decision-making/problem-solving situations.	1	2	3	4	5
4. staff behavior allows management to feel free to discuss issues in decision-making/problem-solving situations.	1	2	3	4	5

I FEEL THAT WITHIN THE PRESENT DECISION-MAKING/PROBLEM-SOLVING PROCESS . . .

		Great Disagreement				Great Agreement
5.	management really tries to incorporate staff ideas and opinions in decision-making/problem-solving situations.	1	2	3	4	5
6.	staff generally tries to incorporate management ideas and opinions in decision-making/problem-solving situations.	1	2	3	4	5
7.	management has frank interactions with staff.	1	2	3	4	5
8.	staff has frank interactions with management.	1	2	3	4	5
9.	management's perception of staff in decision-making/problem-solving capabilities is accurate.	1	2	3	4	5
10.	staff's perception of management in decision-making/problem-solving capabilities is accurate.	1	2	3	4	5
11.	management makes decisions without staff participation and consensus.	1	2	3	4	5
12.	management makes decisions without regard to problems encountered by staff.	1	2	3	4	5
13.	management makes decisions without communicating with staff.	1	2	3	4	5
14.	decision making/problem solving is completed without obtaining sufficient alternatives.	1	2	3	4	5
15.	management does not provide sufficient data and facts to staff for involvement in decision-making/problem-solving situations.	1	2	3	4	5
16.	management encourages staff who hold differing points of view to express themselves freely and fully in decision-making/problem-solving situations.	1	2	3	4	5

I FEEL THAT WITHIN THE PRESENT DECISION-MAKING/ PROBLEM-SOLVING PROCESS . . .

		Great Disagreement				Great Agreement
17.	solutions/decisions are based on data and facts rather than opinions of management.	1	2	3	4	5
18.	institutional decision making/problem solving is done in accordance with a planned sequence of steps.	1	2	3	4	5
19.	most institutional decision making/problem solving is directed at general situations rather than specific work-related situations.	1	2	3	4	5
20.	solutions/decisions lack innovation because different frames of reference, brainstorming, and other participative techniques are not utilized.	1	2	3	4	5
21.	management and staff are highly motivated to become involved in the decision-making/problem-solving process.	1	2	3	4	5
22.	communication is promoted between levels of responsibility.	1	2	3	4	5
23.	positive attitudes toward decision-making/ problem-solving capabilities of management and staff within LTI are promoted.	1	2	3	4	5
24.	the sharing of information between management and staff within LTI is inhibited.	1	2	3	4	5
25.	information being communicated vertically is distorted.	1	2	3	4	5
26.	job-related activities of management and staff are influenced greatly by their participation in the process.	1	2	3	4	5
27.	solutions/decisions are based on adequate information/data at the level at which the decisions are made.	1	2	3	4	5

I FEEL THAT WITHIN THE PRESENT DECISION-MAKING/PROBLEM-SOLVING PROCESS . . .

		Great Disagreement				Great Agreement
28.	management and staff involvement in decision making/problem solving is directly related to their responsibilities.	1	2	3	4	5
29.	group interaction involves unlimited or open discussion.	1	2	3	4	5
30.	the productivity of management and staff is negatively affected.	1	2	3	4	5
31.	I have had adequate training for participation in decision-making/problem-solving situations.	1	2	3	4	5
32.	I have had little opportunity to contribute my knowledge and skills in decision-making/problem-solving situations within the institution.	1	2	3	4	5

MANAGERIAL PHILOSOPHIES SCALE

A survey of the manager's assumptions and working theories about the nature of those whose activities he or she coordinates.

by

Jacob Jacoby, Ph.D.

James R. Terborg, Ph.D.

NOTICE

The language in this learning instrument is male oriented. Although we do not wish to offend anyone, to add feminine pronouns now would make the instrument literally different from the one which was validated. Both female and male managers are included in the normative sample.

ANOTHER LEARNING INSTRUMENT from

TELEOMETRICS INT'L.

1755 WOODSTEAD COURT
P.O. BOX 7437
THE WOODLANDS, TEXAS 77380
(713) 367-0060

APPENDIX F

TRAINING, ACCEPTANCE, SUPPORT, AND IMPACT OF QUALITY/ PERFORMANCE CIRCLES QUESTIONNAIRE

DIRECTIONS: Please check/circle the number that most nearly represents your opinion/feeling about the item.

MY CURRENT POSITION AT LAKESHORE TECHNICAL INSTITUTE IS:

☐ MANAGEMENT - Includes administrators, coordinators, supervisors, support staff managers, and specialists.

☐ NONMANAGEMENT - Includes faculty and support services staff members.

Quality/Performance Circle Training

1. The level of the content of my two-day Quality/Performance Circle training session was:

1	2	3	4	5
Too Basic		Appropriate		Too Complex

2. The quality of the materials (manuals, tapes, working papers, etc.) utilized in my training session was:

1	2	3	4	5
Very Poor		Appropriate		Excellent

3. The content of the materials (manuals, tapes, working papers, etc.) utilized in my training session was:

1	2	3	4	5
Very Poor		Appropriate		Excellent

4. The length of time (two days) utilized for my Quality/Performance Circle training was:

1	2	3	4	5
Too Short		Appropriate		Too Long

5. I have sufficient information and skill in each of the following areas to adequately function as a participant in a Quality/Performance Circle:

A. Establishing a Quarterly Theme

1	2	3	4	5
Great Disagreement		No Opinion/ Difference		Great Agreement

B. Developing Specific Measurable Goals

1	2	3	4	5
Great Disagreement		No Opinion/ Difference		Great Agreement

C. Using Brainstorming Techniques

1	2	3	4	5
Great Disagreement		No Opinion/ Difference		Great Agreement

D. Using Group Decision Making

1	2	3	4	5
Great Disagreement		No Opinion/ Difference		Great Agreement

E. Identifying Roadblocks

1	2	3	4	5
Great Disagreement		No Opinion/ Difference		Great Agreement

F. Planning and Implementing Activities

1	2	3	4	5
Great Disagreement		No Opinion/ Difference		Great Agreement

G. Evaluating Results

1	2	3	4	5
Great Disagreement		No Opinion/ Difference		Great Agreement

6. I would rate the Quality/Performance Circle training as conducted by Measurable Performance Systems, Inc. as:

1	2	3	4	5
Very Poor		Average		Excellent

7. Comments and Suggestions:

What suggestions would you make to improve the training for participation in Quality/Performance Circles?

Role of Quality/Performance Circle Facilitator

8. The facilitator provided me with adequate communication concerning the LTI Quality/Performance Circle process prior to my involvement.

0*	1	2	3	4	5
N/A	Great Disagreement		No Opinion/ Difference		Great Agreement

9. The facilitator provided adequate assistance to my circle during my involvement.

0*	1	2	3	4	5
N/A	Great Disagreement		No Opinion/ Difference		Great Agreement

10. Adequate additional training was provided during my involvement.

0*	1	2	3	4	5
N/A	Great Disagreement		No Opinion/ Difference		Great Agreement

* Not applicable because none was given, requested, etc.

11. Comments and Suggestions:

What suggestions would you make to assist a Quality/Performance Circle facilitator in carrying out his/her necessary duties and responsibilities?

Quality/Performance Circle Acceptance/Support by Participating Circle Members

12. I feel that the Quality/Performance Circle process is a valuable method for encouraging employee participation in the decision-making and problem-solving process.

0*	1	2	3	4	5
N/A	Great Disagreement		No Opinion/ Difference		Great Agreement

13. I feel that my circle's goals were worthwhile.

0*	1	2	3	4	5
N/A	Great Disagreement		No Opinion/ Difference		Great Agreement

14. I feel good about my circle's accomplishments.

0*	1	2	3	4	5
N/A	Great Disagreement		No Opinion/ Difference		Great Agreement

15. I feel that my Quality/Performance Circle's activities were less rewarding than activities that they took time away from.

0*	1	2	3	4	5
N/A	Great Disagreement		No Opinion/ Difference		Great Agreement

16. I value my participation in the Quality/Performance Circle process.

0*	1	2	3	4	5
N/A	Great Disagreement		No Opinion/ Difference		Great Agreement

17. I feel that participation in the Quality/Performance Circle process is valued by most of the other members of my circle.

0*	1	2	3	4	5
N/A	Great Disagreement		No Opinion/ Difference		Great Agreement

18. I feel that management's actions upon my circle's recommendations/requests have been appropriate.

0*	1	2	3	4	5
N/A	Great Disagreement		No Opinion/ Difference		Great Agreement

19. I feel that the Quality/Performance Circle process is valued by most of the noncircle participants within my department/division.

0*	1	2	3	4	5
N/A	Great Disagreement		No Opinion/ Difference		Great Agreement

20. I feel that the Quality/Performance Circle process is valued by my immediate supervisor.

0*	1	2	3	4	5
N/A	Great Disagreement		No Opinion/ Difference		Great Agreement

21. I feel that management encourages my circle participation.

0*	1	2	3	4	5
N/A	Great Disagreement		No Opinion/ Difference		Great Agreement

22. I feel that management has shown an interest in my circle's activities.

0*	1	2	3	4	5
N/A	Great Disagreement		No Opinion/ Difference		Great Agreement

* Not applicable because individual has no basis for a judgement or feeling.

23. Comments and Suggestions:

What comments do you have concerning the acceptance/support of Quality/Performance Circles by the LTI staff?

Measurement of the Impact of Quality/Performance Circles on Lakeshore Technical Institute

24. As a result of your involvement in the Quality/Performance Circle process in 1982-83, which of the following areas have been addressed by the goal(s) of your circle: (check one or more)

A. Reducing the Operating Cost at LTI ☐
B. Improvement of Support Services ☐
C. Improvement of Instruction ☐
D. Improvement of Working Conditions ☐
E. Improvement of Employee Attitudes (Morale) ☐
F. Improvement of the Quality of Work Life ☐
G. Improvement of Internal Communications ☐

25. During 1983-84, would you consider participating within a Quality/Performance Circle?

Yes ☐

No ☐

26. During 1983-84, would you consider participating within a Quality/Performance Project Circle?

Yes ☐

No ☐

27. What changes would you recommend to improve the Quality/Performance Circles process?

____

____

____

____

APPENDIX G

QUALITY/PERFORMANCE CIRCLES IMPLEMENTATION PROCESS COMMENTS AND SUGGESTIONS

I. Quality/Performance Circles Training

What suggestions would you make to improve the training for participation in Quality/Performance Circles?

Nonmanagement Responses

I would like to learn more about how to use some of the diagrams--such as the fishbone.

Get to the nitty-gritty quicker. More time going through problem-solving techniques.

It all seems rather vague and confusing until you actually get into the circle concept. Then it all sort of falls together and makes sense.

Not as academic--try to be more realistic towards our institution. It seems too unreal, bring down to earth more. Problems were made by people--problems can be solved by people.

Better booklet on Performance Circles and have it to read before the training starts.

Shorter training session--let one idea "soak in." To start--give a basic statement or goal and build an example, then formulate our own goal. Give more specific examples of all points.

Form circles with participants with common concerns.

Management Responses

Same amount of time, but allow group to work on quarterly theme alone and then return to develop goals, then allow group to finalize goals and resume training for fishbone and plan of action.

Need follow-up training sessions. Periodic visits to circles should be continued by the trainer, especially in the beginning. More review sessions.

Consultants should sit through another quarterly theme and goal establishment to see that we stay with the adopted procedures and proven techniques.

Had the materials been ready before our training sessions, it would have been above average.

Everyone at LTI needs this training whether in a circle or not; utilize the facilitator for training from here on since it will be less costly.

There are other processes and techniques in the manual that were not part of training. Maybe an early spring session to catch loose ends and remotivate.

More positive communication to members and groups from administration. A lot of time is consumed and the same amount of work must be completed. I don't think this is the case, however, it could be viewed as such.

Should have more training before beginning the actual work. Training was too rushed and frustration resulted. Level of frustration was allowed to become too great during training.

More emphasis on goal and theme setting--perhaps one whole session.

Be more specific in identifying potential goals and roadblocks.

Too much time spent first day in redundant material--get to hands-on earlier in training program. Future training is necessary in the use of diagrams, etc.

Feel time would have been better spread over a longer period. Not done in two consecutive days--possibly four shorter periods. More things to do during the training time.

Reduce or condense the presentation, follow-up guidelines, flow chart in order for circles to measure performance and progress.

There seemed to be activities that weren't necessary. There were several other things that could have been eliminated.

II. Quality/Performance Circles Acceptance/Support

What suggestions would you make to assist a Quality/Performance Circle facilitator to carry out the necessary duties and responsibilities?

Nonmanagement Responses

More direction could have been given at the start and a possible "kick" as we went along.

Have more homogeneous groupings.

Never heard any comments about our meetings. We never knew if the minutes were read or not. There must have been times when we could have been praised, criticized, or whatever.

Perhaps at the beginning of next year there could be a review of problem-solving/decision-making techniques, setting circle goals, reasons for forming a circle, etc.

Management Responses

Try to inform nonparticipants on a more regular basis of the activities of the Circles. Also, try to get more people participating--or more Circles formed--since there appears to be more interest. Planning activities/work must be incorporated in the training sessions of circle involvement. Also, increase the problem-solving methods.

Staff has to become involved in Quality Circles in order to have it function on a school-wide basis.

Sit in on meetings, not for input, just to observe and make suggestions. Have a brief newsletter/memo regarding Circle action and circulate to staff, board, etc. Continue positive attitude about Circle participation.

Greater assistance in goal decision-making process.

Occasional appearance at Circle meetings--not scheduled.

Additional needs-for-training assessment with extra sessions for assistance with specific Q/P Circle techniques throughout the year.

Attempt to increase communication flow.

Continue to maintain personal contact with each Circle on a regular basis. Continue to provide updating on new or additional techniques.

More pretraining with Circle coordinators and increase contact with them.

Review sessions on the process techniques available to keep Circles moving.

Need a planned program for training and retraining of group participative skills.

Monthly meeting with Circle leaders. This allows for encouragement and sharing of experiences.

III. Quality/Performance Circles Impact

What comments do you have concerning the acceptance/support of Quality/Performance Circles by the LTI staff?

Nonmanagement Responses

Those outside the Circle were not happy with the Circle or our activities. Perhaps they should have been better informed.

I feel there is more acceptance now than there was at the beginning.

A better understanding of nonparticipating staff to avoid conflict.

Instructional staff have very negative outlook on Circles in general.

It is not viewed by the general staff as worthwhile because it does not address issues they are concerned about. Many staff feel that Circles are a "management ploy."

Get more staff involved in it by rotation of members.

Management Responses

The goals would not have been accomplished without the Circles. Results will have a lasting effect on the institution.

It seems very positive. There will be a problem with the Unions. Movement to Project Circles could help over an extended period by continually promoting the process.

Quality Circle process needs involvement of faculty in order to bring out greater participation.

Those involved have a high degree of acceptance and support for the program.

Widely supported by participants and perhaps suspiciously by nonparticipants. Continue informational meetings, and look at the need to possibly reorganize some of the groups.

Greater publicity to outside public; having key instructional personnel "tackle" getting the instructors to participate.

The acceptance/support of QC by the LTI staff will eventually be increased once they are exposed to the accomplishments of Circle activities.

The acceptance of the Q/P Circle value will come over time as more positive results are communicated.

There always will be those who find something wrong with a good idea (concept) because of their mistrust. Give them an opportunity to participate and perhaps they'll find something positive about their experience.

Managers will accept the entire Q/C concept far more when they can develop a Circle among their own staff.

Additional information relative to Q/P Circles needed to be communicated to off-campus staff. Would like to see a Circle comprised of GOAL staff.

The attitude has changed. More are for Circle involvement now compared to when it first started.

Continue the report of activities to staff.

As we weed out those who do not want to be involved, the Q/P Circles will gain respect. Allow staff to enter Circles that need members.

Over the months of Circle involvement, I feel the instructors look at it as having more value than they anticipated, yet they recognize the difficulty to get involved (time schedules). It appears that the nonparticipating support staff want to become involved in future Circles.

IV. Quality/Performance Circles Recommendations

What changes would you recommend to improve the Quality/Performance Circles process?

Nonmanagement Responses

The Circle process should be more of a voluntary process. There are many people who are not Circle members who would like to be. One of my main concerns with Circles is that sometimes I have a conflict with meeting work deadlines because I have to attend Circle meetings at a certain time.

For our Circle, it has sometimes been hard because of the scope we are limited to, if possible a larger scope would be beneficial.

Opening Circles up to volunteer membership. Perhaps monthly written statements to staff on goals of Circles.

Management Responses

Never make it mandatory at the inception. Make it appear more as a training program for job and self-improvement.

It is a good idea and helps us to communicate on an equal basis. Keep it as "one" of the tools the institution can use to improve delivery of our services.

See it used more to solve specific existing problems. Encourage 100% attendance by Circle members at weekly meetings.

Better identify potential roadblocks when goals are being decided.

I felt that our Circle had to search for problems/projects to solve. This frustrated me as I feel there are enough problems and projects within my own department where my time and knowledge could be more useful. Therefore, it would be more helpful if the Circles were formed within departments. However, I did value from the learning experience of participating.

Recognition be given to members/groups that have made contributions.

Possibly additional and/or refresher training. Attempts to again involve the instructional staff. The Project Circle concept could be a good vehicle to involve more individuals.

Procurement of at least a half-time facilitator in order to devote maximum time to project and ongoing/continuing activities.

Spot-check visits by consultant to keep circle on track and utilizing Circle concepts.

Review of purpose and how to conduct the meetings so that everyone is functioning from the same basic framework of rules and not inventing how they feel it should be run.

Provide coffee at Circle meetings; give a reward for accomplishments.

Must have a facilitator from upper management to encourage and maintain confidence and support in the future of Q/P Circles.

Perhaps opportunity for more group interaction and even socialization as a group activity by Circle participants.

Provide continuing training for new participants and Circle coordinators. Have the Circle coordinator stay in the leadership position for six months rather than three.

Provide review of techniques for facilitating the Circle process.

APPENDIX H

SUMMARY OF QUALITY/PERFORMANCE CIRCLES
GOALS AND PROJECTS--1982/83

Big Band Circle--Six Administrators

1. An idea/suggestion memo system (Speak Up/Speak Easy) was developed for use by LTI personnel who desired an answer to a question, wished to communicate information, or requested information.

2. During 1982-83, each Big Band Circle member attended a department, advisory committee, or curriculum committee meeting within each educational/support services division (an average of at least one per quarter).

3. The Big Band Circle encouraged intramural events among LTI staff members by participating and organizing these events during the 1982-83 school year. (Intramural events included volleyball games.)

4. A recognition (retirement) program for full-time staff was developed. Guidelines were established for retirement (positive termination) and recognition for years of service at LTI.

5. Developed a process and structure to promote greater communication/involvement of LTI staff in the institutional decision-making/problem-solving process.

Middlemen Circle--Eight Program Supervisors

1. Developed a self-educational program in the application of LTI internal computer and T.V. systems.

2. Developed the design of a computer literacy course for LTI students in order to promote a knowledge base allowing integration of computer applications into program curricula.

3. Developed a standardized job description which outlined the responsibilities, authority, and procedures for the position of program supervision at Lakeshore Technical Institute.

Synergistic Circle--Seven Program Coordinators

1. Developed an advertising program which advertised LTI adult extension offerings and printed articles in 20 in-house communiques.

2. Developed a news release publicizing Lakeshore Technical Institute's involvement in Quality Circles. News releases were

submitted to all district newspapers, the Corporate Connection, WAVAE Lifeline, and the State Director's Newsletter.

3. Developed a flow chart to analyze the roadblocks of the Adult and Continuing Education flyer flow chart.

Eclectic Circle--Six Educational Specialists

1. Compiled a summary of roles and functions of selected specialized support services staff and disseminated the material to full- and part-time staff.

2. Developed a uniform Project Proposal Request Form for all LTI staff; i.e., curriculum projects, federal projects, and research and foundation projects.

Lifeline Circle--Eight Support Services Managers/Specialists

1. Developed an interview instrument for the purpose of evaluating existing support services. The survey was presented to each of the Quality/Performance Circles, and a written report of the results and proposed action was compiled.

2. Developed the Who's Who/What's What recognition program which was incorporated with the weekly Announcements. Staff, forms, and/or activities from each support services area were highlighted to promote awareness of the support services.

Pathfinders Circle--Four Faculty

1. Developed an informational system on how the computer can assist the LTI faculty in record keeping, word processing, and grading procedures.

2. Developed a survey instrument for the purpose of obtaining information on personal computers owned by LTI staff, related equipment, and software. Results of survey to be computerized and made available to all staff for resource information and sharing.

Silver and Gold Circle--Nine Support Services Staff

1. Updated the Office Procedures Manual by revising the index and completing sample forms.

2. Developed an in-service program for circle members. Invited guest speakers to give presentations pertinent to the development of professionalism.

3. As a result of the presentations conducted by the guest speakers, one-line statements pertaining to the speakers' presentations were published in the weekly Announcements. These statements were considered to be of value to the entire staff.

4. Conducted a field trip to the Fox Valley Technical Institute in Appleton, Wisconsin.

BIOGRAPHICAL SKETCH

Dennis Ladwig, born in Milwaukee, Wisconsin, attended high school in Rochelle, Illinois, and graduated from Beloit Memorial High School in 1957. He attended the University of Wisconsin-Whitewater, majoring in Business Administration.

Immediately following graduation from the University of Wisconsin-Whitewater in 1962, he enlisted in the Wisconsin Air National Guard. Upon his release from active duty, he began his professional career working as an inventory control analyst with American Motors Corporation.

He then pursued a career as an educator and enrolled in the school of education at the University of Wisconsin-Whitewater. Upon graduation in 1964, he was employed as a business administration instructor at the Sheboygan School of Vocational, Technical and Adult Education in Sheboygan, Wisconsin.

Dennis began his professional management career at the Lakeshore Vocational, Technical and Adult Education District. He previously held the positions of business manager, administrator of Administrative Services, and was appointed to his current position of assistant director of the Lakeshore Vocational, Technical and Adult Education District in 1972.

In each career, Dennis continued his education. He received a Master of Science degree in School Business Management from the University of Wisconsin-Whitewater in 1970. He completed specialized courses at the University of Wisconsin and Michigan Technological University.

In 1981 he enrolled in the Nova University Doctor of Education (Ed.D.) program in higher education.

Dennis is married; and his wife, Sharon, is currently pursuing an associate degree in nursing at Lakeshore Technical Institute. They have three daughters. The oldest daughter, Kelly, is a sophomore in high school; the second daughter, Kristin, will be a middle school eighth grader; and Kimberly attends elementary school.

I certify that I have read and am willing to sponsor this Major Applied Research Project submitted by Dennis J. Ladwig. In my opinion it conforms to acceptable standards and is fully adequate in scope and quality as a Major Applied Research Project for the degree of Doctor of Education at Nova University.

(date)

Dr. Sebastian V. Martorana
MARP Advisor

I certify that I have read this Major Applied Research Project, and in my opinion it conforms to acceptable standards for a Major Applied Research Project for the degree of Doctor of Education at Nova University.

(date)

Dr. George P. Grimes
Local Committee Member

This Major Applied Research Project was submitted to the Central Staff of the Center for Higher Education of Nova University and is acceptable as a partial fulfillment of the requirements for the degree of Doctor of Education.

(date)

Dr. George M. Barton
Central Staff Committee Member

ERIC Clearinghouse for Junior Colleges
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Los Angeles, California 90024

AUG 5 1983